Order No. MAC0301004C3

Service Manual

Room Air Conditioner

CS-E1819K CU-E1819K / CS-E2419K CU-E2419K

Eolia
National

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⚠ WARNING

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Eolia
National

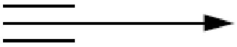
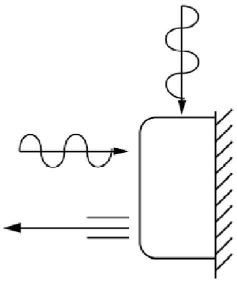
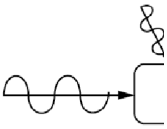
1. Features

- High Efficiency
- Compact Design
- Comfort Environment
- 8 hours of sleep mode operation

- Air filter with function to reduce dust and smoke
- Wider range of horizontal discharge air
- New Automatic air swing and manual adjusted by remote control for horizontal airflow.
- Auto Restart
- Random auto restart after power failure for safety restart operation
- Removable and Washable Front Panel
- Remote Control Self-illuminating Button
- Quality Improvement
- Gas leakage protection
- Prevent compressor reverse cycle
- Inner protector
- Noise prevention during soft dry operation
- Anti-dew Formation Control (Cooling & Soft Dry)
- Operation Improvement
- Economy mode to reduce electrical power consumption
- Powerful mode to reach the desired room temperature quickly
- Long Installation Piping
- Long piping up to 25 meter
- 24-hour Timer Setting

2. Functions

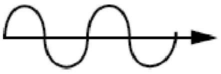
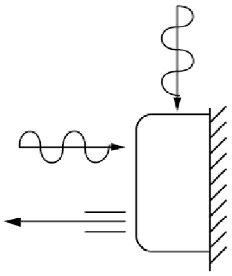
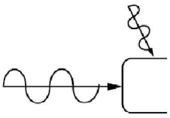
3. Product Specifications

		Unit	CS-E1819K	CU-E1
Power Source		**Phase, Voltage, Cycle**	**Single, 220 - 240 V, 50 Hz**	
Cooling Capacity		**kW (BTU/h)**	**5.28 - 5.30 (18,000 - 18,100)**	
Moisture Removal		**l/h (Pint/h)**	**2.9 (6.1)**	
Airflow Method		**OUTLET**  **INTAKE**	**SIDE VIEW** 	**TOP VI** 
Air Volume	**Indoor Air (Lo)**	**m^3/min (cfm)**	**12.7 - 12.7 (450 - 450)**	**—**
	Indoor Air (Me)	**m^3/min (cfm)**	**13.7 - 13.7 (486 - 486)**	**—**
	Indoor Air (Hi)	**m^3/min (cfm)**	**14.9 - 14.9 (526 - 526)**	**39.7 - 42.6 1,50**
Noise Level		**dB (A)**	**High 42 - 42, Low 37 -37**	**High 54**
Electrical Data	**Input Power**	**kW**	**1.92 - 1.98**	
	Running Current	**A**	**8.9 - 8.5**	
	EER	**W/W (BTU/hW)**	**2.75 - 2.68 (9.38 - 9.14)**	
	Starting Current	**A**	**40.0**	
Piping Connection Port (Flare piping)		**inch inch**	**G ; Half Union 1/2” L ; Half Union 1/4”**	**G ; 3-way v L ; 3-way v**
Pipe Size (Flare piping)		**inch inch**	**G ; (gas side) 1/2” L ; (liquid side) 1/4”**	**G ; (gas si L ; (liquid s**
Drain Hose	**Inner diameter**	**mm**	**12**	**—**
	Length	**mm**	**650**	**—**
Power Cord	**Length**	**m**	**1.9**	**—**
	Number of core-wire		**3 (1.5 mm^2)**	**—**
Dimensions	**Height**	**inch (mm)**	**10 - 13/16 (275)**	**26 - 31/3**
	Width	**inch (mm)**	**39 - 9/32 (998)**	**31 - 1/2**
	Depth	**inch (mm)**	**8 - 9/32 (210)**	**11 - 13/1**
Net Weight		**lb (kg)**	**24 (11.0)**	**121 (5**
Compressor	**Type**		**—**	**Rotary (1 c rolling pis**
	Motor Type		**—**	**Induction (**
	Rated Output	**kW**	**—**	**1.5**

			Unit	CS-E1819K	CU-E18
Air Circulation		**Type**		**Cross-flow Fan**	**Propelle**
		Material		**ASHT-18**	**PC + AES + G 15%**
	Motor	**Type**		**Transistor (8-poles)**	**Induction (**
		Input	**W**	**44.8 - 53.5**	**121.1 - 1**
	Rated	**Output**	**W**	**30**	**67**
	Fan Speed	**Low**	**rpm**	**1,130 - 1,130**	**—**
		Medium	**rpm**	**1,220 - 1,220**	**—**
		High	**rpm**	**1,320 - 1,320**	**990 - 1**
Heat Exchanger	**Description**			**Evaporator**	**Conde**
	Tube material			**Copper**	**Copp**
	Fin material			**Aluminium (Pre Coat)**	**Alumi**
	Fin Type			**Slit Fin**	**Corrugat**
	Row / Stage			**(Plate fin configuration, forced dr**	
				2 × 15	**2 × 3**
	FPI			**21**	**18**
	Size (W × H × L)		**mm**	**810 × 315 × 25.4**	**775.2 × 6 753.5**
Refrigerant Control Device				**—**	**Capillary**
Refrigeration Oil			**(cm3)**	**—**	**SUNISO 4 ATMOS M**
Refrigerant (R-22)			**g (oz)**	**—**	**1,160 (**
Thermostat				**Electronic Control**	**Mecha. C**
Protection Device				**—**	**Inner Pro**
Capillary Tube	**Length**		**mm**	**—**	**611**
	Flow Rate		**l/min**	**—**	**27**
	Inner Diameter		**mm**	**—**	**2.1**
Air Filter	**Material Style**			**P.P. Honeycomb**	**—**
Capacity Control				**Capillary Tube**	
Compressor Capacitor			**μ F, VAC**	**—**	**45 μ F, 3**
Fan Motor Capacitor			**μ F, VAC**	**—**	**3.5 μ F, 4**

Note:

- Specifications are subject to change without notice for further improvement.

		Unit	CS-E2419K	CU-E241
Power Source		Phase, Voltage, Cycle	Single, 220 - 240 V, 50 Hz	
Cooling Capacity		kW (BTU/h)	6.93 - 7.03 (23,600 - 24,000)	
Moisture Removal		l/h (Pint/h)	4.0 (8.5)	
Airflow Method		OUTLET INTAKE 	SIDE VIEW 	TOP VIE 
Air Volume	Indoor Air (Lo)	m^3/min (cfm)	14.7 - 14.7 (520 - 520)	—
	Indoor Air (Me)	m^3/min (cfm)	16.3 - 16.3 (576 - 576)	—
	Indoor Air (Hi)	m^3/min (cfm)	17.9 - 17.9 (632 - 632)	46.0 - 49.0 (1,730)
Noise Level		dB (A)	High 46 - 46, Low 40 - 40	High 59 -
Electrical Data	Input Power	kW	2.57 - 2.70	
	Running Current	A	13.0 - 13.2	
	EER	W/W (BTU/hW)	2.70 - 2.60 (9.18 - 8.89)	
	Starting Current	A	67.0	
Piping Connection Port **(Flare piping)**		inch inch	G ; Half Union 5/8” L ; Half Union 1/4”	G ; 3-way va L ; 3-way val
Pipe Size **(Flare piping)**		inch inch	G ; (gas side) 5/8” L ; (liquid side) 1/4”	G ; (gas sid L ; (liquid si
Drain	Inner diameter	mm	12	—
Hose	Length	mm	650	—
Power Cord	Length	m	1.9	—
	Number of core-wire		3 (2.5 mm^2)	—
Dimensions	Height	inch (mm)	10 - 13/16 (275)	26 - 31/32
	Width	inch (mm)	39 - 9/32 (998)	31 - 1/2 (
	Depth	inch (mm)	8 - 9/32 (210)	11 - 13/16
Net Weight		lb (kg)	24 (11.0)	132 (60.
Compressor	Type		—	Rotary (1 cy rolling pisto
	Motor Type		—	Induction (2
	Rated Output	kW	—	2.2

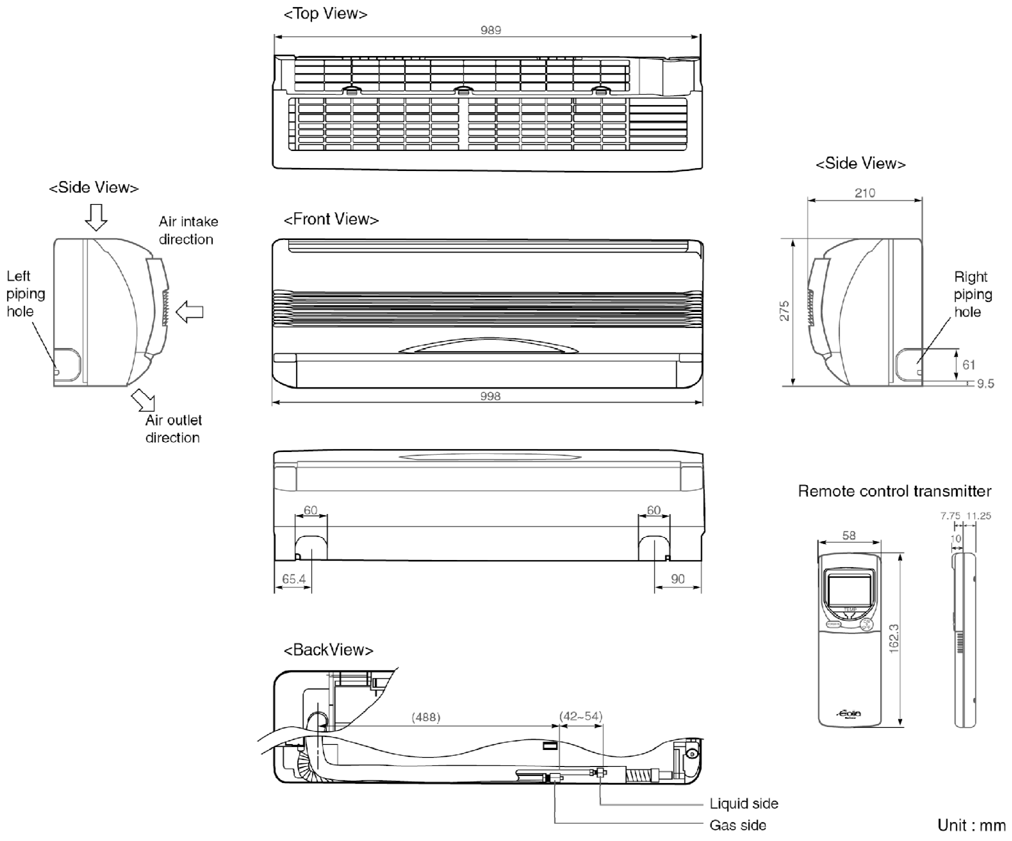
			Unit	CS-E2419K	CU-E241
Air Circulation		**Type**		**Cross-flow Fan**	**Propeller**
		Material		**ASHT-18**	**PC + AES + Fiber 15**
	Motor	**Type**		**Transistor (8-poles)**	**Induction (4**
		Input	**W**	**44.8 - 53.5**	**154.8 - 16**
	Rated	**Output**	**W**	**30**	**108**
	Fan Speed	**Low**	**rpm**	**1,220 - 1,220**	**—**
		Medium	**rpm**	**1,350 - 1,350**	**—**
		High	**rpm**	**1,480 - 1,480**	**1,155 - 1,**
Heat Exchanger	**Description**			**Evaporator**	**Condens**
	Tube material			**Copper**	**Coppe**
	Fin material			**Aluminium (Pre Coat)**	**Aluminiu**
	Fin Type			**Slit Fin**	**Corrugate**
	Row / Stage			**(Plate fin configuration, forced dra**	
				2 × 15	**2 × 26**
	FPI			**21**	**18**
	Size (W × H × L)		**mm**	**810 × 315 × 25.4**	**769.2 × 6 732.9 44**
Refrigerant Control Device				**—**	**Capillary**
Refrigeration Oil			**(cm^3)**	**—**	**SUNISO 4G ATMOS M60**
Refrigerant (R-22)			**g (oz)**	**—**	**1,730 (61**
Thermostat				**Electronic Control**	**Mecha. Co**
Protection Device				**—**	**Inner Prot**
Capillary Tube	**Length**		**mm**	**—**	**675**
	Flow Rate		**l/min**	**—**	**25.5**
	Inner Diameter		**mm**	**—**	**2.1**
Air Filter	**Material Style**			**P.P. Honeycomb**	**—**
Capacity Control				**Capillary Tube**	
Compressor Capacitor			**μF, VAC**	**—**	**45 μF, 37**
Fan Motor Capacitor			**μF, VAC**	**—**	**3.5 μF, 45**

Note:

- Specifications are subject to change without notice for further improvement.

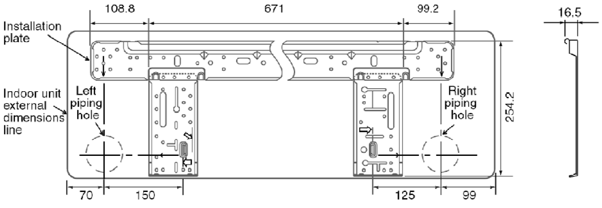
4. Dimensions

CS-E1819K / CS-E2419K



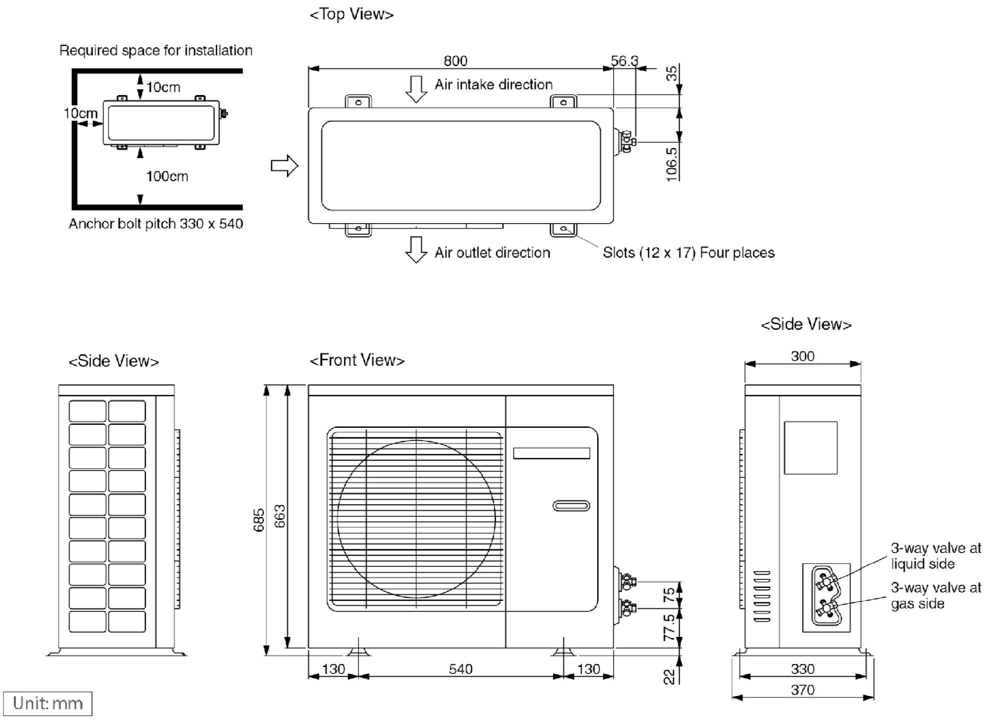
<Top View>
989
<Side View>
Air intake direction
Left piping hole
Air outlet direction
<Front View>
998
<Side View>
210
275
Right piping hole
61
9.5
60
60
65.4
90
Remote control transmitter
7.75
11.25
10
58
162.3
<BackView>
(488)
(42~54)
Liquid side
Gas side
Unit : mm

Relative position between the indoor unit and the installation plate <Front View>



108.8
671
99.2
16.5
Installation plate
Indoor unit external dimensions line
Left piping hole
Right piping hole
254.2
70
150
125
99

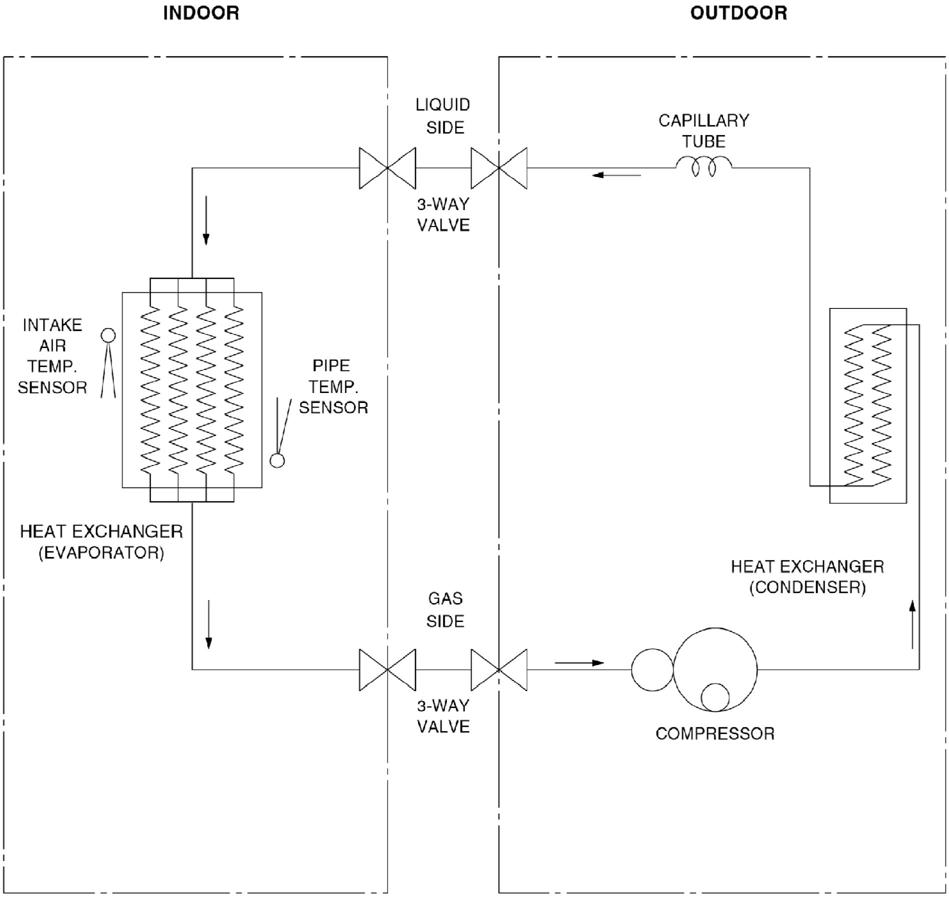
CU-E1819K / CU-E2419K



<Top View>
Required space for installation
10cm
10cm
100cm
Anchor bolt pitch 330 x 540
800
56.3
35
106.5
Air intake direction
Air outlet direction
Slots (12 x 17) Four places
<Side View>
<Front View>
<Side View>
685
663
75
77.5
22
130
540
130
300
330
370
3-way valve at liquid side
3-way valve at gas side
Unit: mm

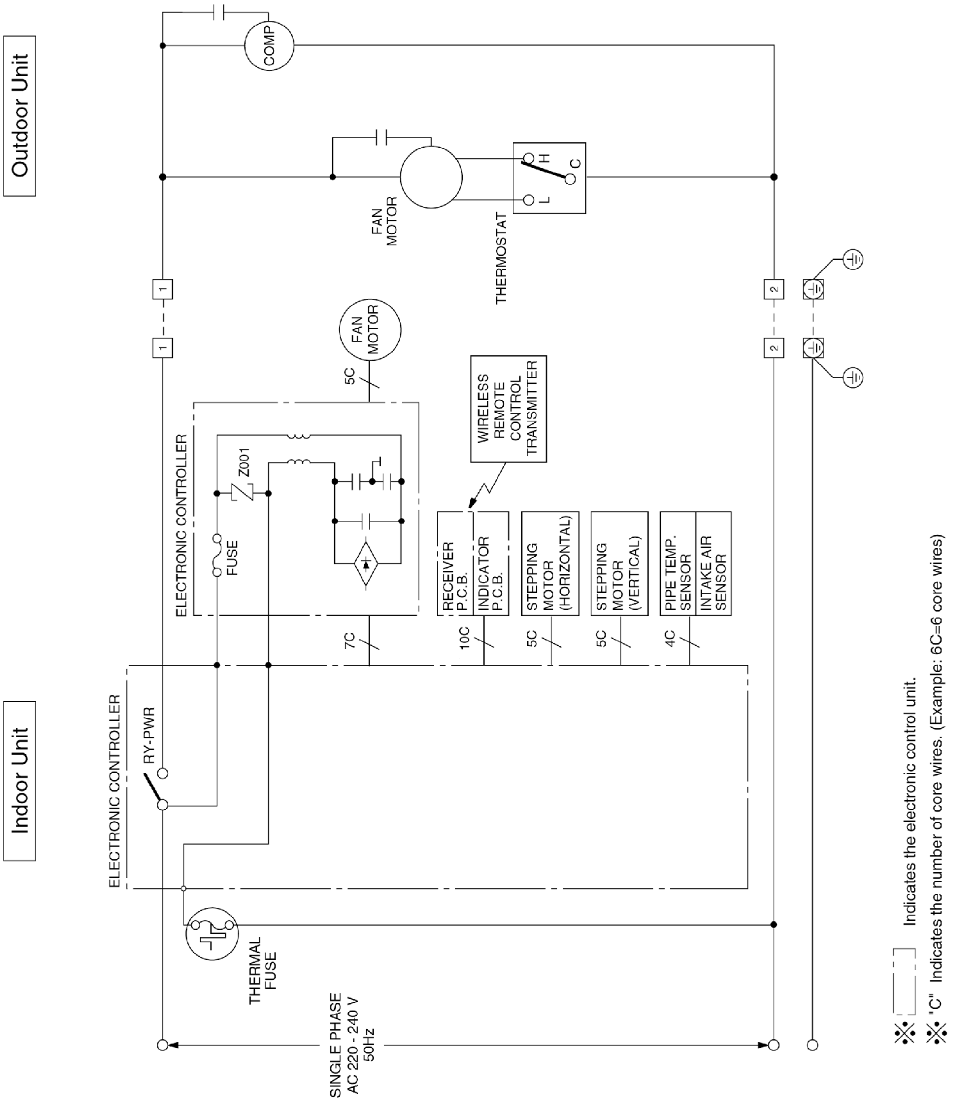
5. Refrigeration Cycle Diagram

CS-E1819K / CU-E1819K
CS-E2419K / CU-E2419K


INDOOR
OUTDOOR
LIQUID SIDE
CAPILLARY TUBE
3-WAY VALVE
INTAKE AIR TEMP. SENSOR
PIPE TEMP. SENSOR
HEAT EXCHANGER (EVAPORATOR)
HEAT EXCHANGER (CONDENSER)
GAS SIDE
3-WAY VALVE
COMPRESSOR

6. Block Diagram

CS-E1819K / CU-E1819K
CS-E2419K / CU-E2419K

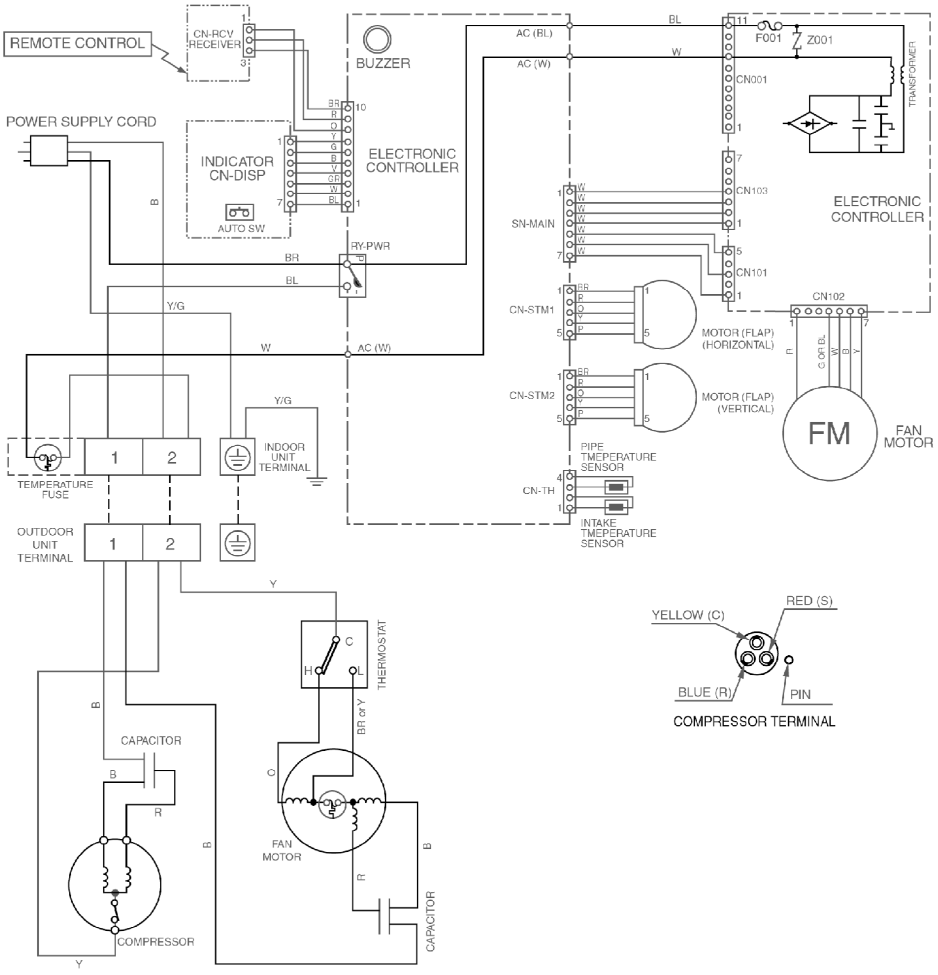

Outdoor Unit
Indoor Unit
COMP
FAN MOTOR
THERMOSTAT
H
L
C
1
2
FAN MOTOR
5C
ELECTRONIC CONTROLLER
Z001
FUSE
WIRELESS REMOTE CONTROL TRANSMITTER
RECEIVER P.C.B.
INDICATOR P.C.B.
STEPPING MOTOR (HORIZONTAL)
STEPPING MOTOR (VERTICAL)
PIPE TEMP. SENSOR
INTAKE AIR SENSOR
7C
10C
5C
5C
4C
ELECTRONIC CONTROLLER
RY-PWR
THERMAL FUSE
SINGLE PHASE
AC 220 - 240 V
50Hz

※ ▭ Indicates the electronic control unit.

※ "C" Indicates the number of core wires. (Example: 6C=6 core wires)

7. Wiring Diagram

CS-E1819K / CU-E1819K
CS-E2419K / CU-E2419K


REMOTE CONTROL
CN-RCV RECEIVER
BUZZER
POWER SUPPLY CORD
INDICATOR CN-DISP
AUTO SW
ELECTRONIC CONTROLLER
RY-PWR
AC (BL)
AC (W)
F001
Z001
CN001
TRANSFORMER
CN103
CN101
CN102
ELECTRONIC CONTROLLER
SN-MAIN
CN-STM1
MOTOR (FLAP) (HORIZONTAL)
CN-STM2
MOTOR (FLAP) (VERTICAL)
FM
FAN MOTOR
PIPE TMEPERATURE SENSOR
CN-TH
INTAKE TMEPERATURE SENSOR
TEMPERATURE FUSE
INDOOR UNIT TERMINAL
OUTDOOR UNIT TERMINAL
THERMOSTAT
CAPACITOR
COMPRESSOR
FAN MOTOR
CAPACITOR
YELLOW (C)
RED (S)
BLUE (R)
PIN
COMPRESSOR TERMINAL

Remarks:

B : BLUE
BR : BROWN
BL : BLACK
W : WHITE
R : RED
O : ORANGE
P : PINK
V : VIOLET
GR : GRAY
Y/G : YELLOW / GREEN

Resistance of Compressor Windings

MODEL	CU-E1819K	CU-E2419K
CONNECTION	2JS318D3CB02	2JS438D3GA02
C - R	1.415 Ω	0.830 Ω
C - S	2.407 Ω	2.257 Ω

Note: Resistance at 20°C of ambient temperature.

8. Operation Details

8.1. Cooling Mode Operation

Cooling in operation according to Remote Control setting.

Time Delay Safety Control (3 minutes)

- When the compressor is stopped by Remote Control, it restarts after 3 minutes when the Remote Control is turned ON.

- When the setting temperature is reached during cooling operation, the compressor stops and it will not start for 3 minutes.

7 minutes Time Save Control

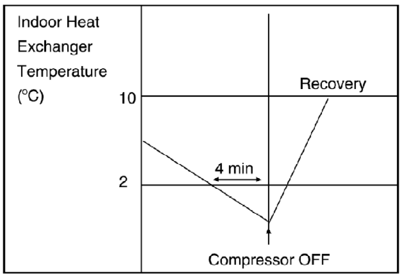
- The compressor will start automatically if it has stopped for 7 minutes even if the room temperature is between the compressor ON temperature and OFF temperature.

Anti-Freezing Control

- If the temperature of the indoor heat exchanger falls continuously below 2°C for 4 minutes or more, the compressor turns off to protect the indoor heat exchanger from freezing. The fan speed setting remains the same.

- Compressor will restart again when the indoor heat exchanger temperature rises to 10°C (Recovery).

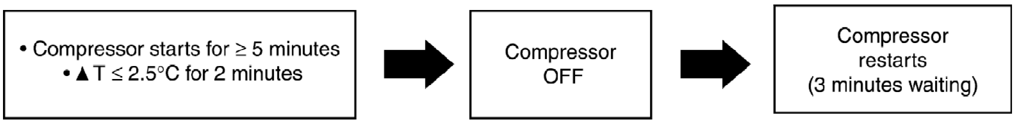
※ 3 minutes waiting of Time Delay Safety Control is valid for Cooling Operation.



Compressor Reverse Rotation Protection Control

- If the compressor is operating continuously for 5 minutes or longer and the temperature difference between intake air and indoor heat exchanger is 2.5°C or less for 2 minutes, compressor will stop and

restart automatically. / (Time Delay Safety Control is valid)


• Compressor starts for ≥ 5 minutes
• ▲T ≤ 2.5°C for 2 minutes
Compressor
OFF
Compressor
restarts
(3 minutes waiting)

▲ T = Intake air temperature - Indoor heat exchanger temperature / This is to protect reverse rotation of the compressor when there is a instantaneous power failure.

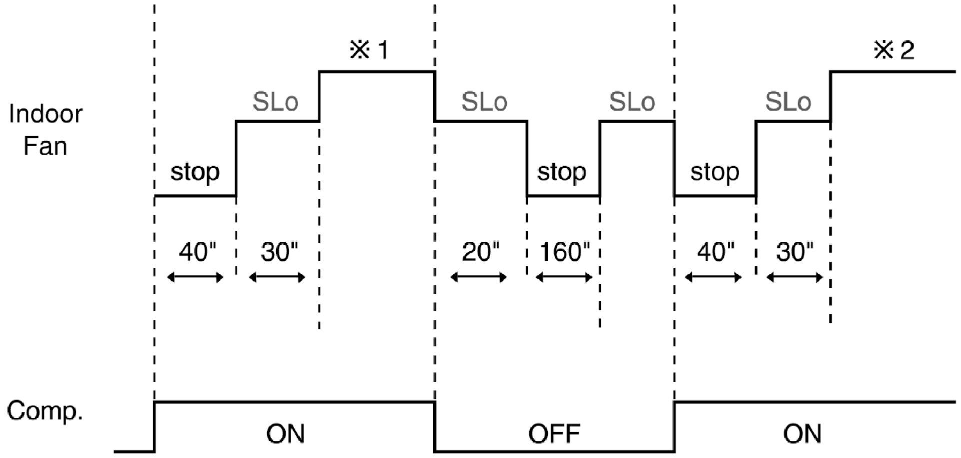
Anti-Dew Formation Control

- **Purpose is to prevent dew formation on indoor unit air discharge area.**
- **When the following conditions occur for 30 minutes continuously, anti-dew formation is controlled by indoor fan speed shift to low (Changed to Lo_{+}):**
- **Indoor intake air temperature is more than 24°C and less than 30°C.**
- **Remote Control setting temperature is less than 25°C.**
- **Compressor is on.**
- **Cooling operation mode.**
- **Indoor Fan motor operate at Low fan speed.**
- **This control is cancelled immediately when above condition is changed.**

Automatic Fan Speed Mode

When Automatic Fan Speed is selected at Remote Control during cooling operation.

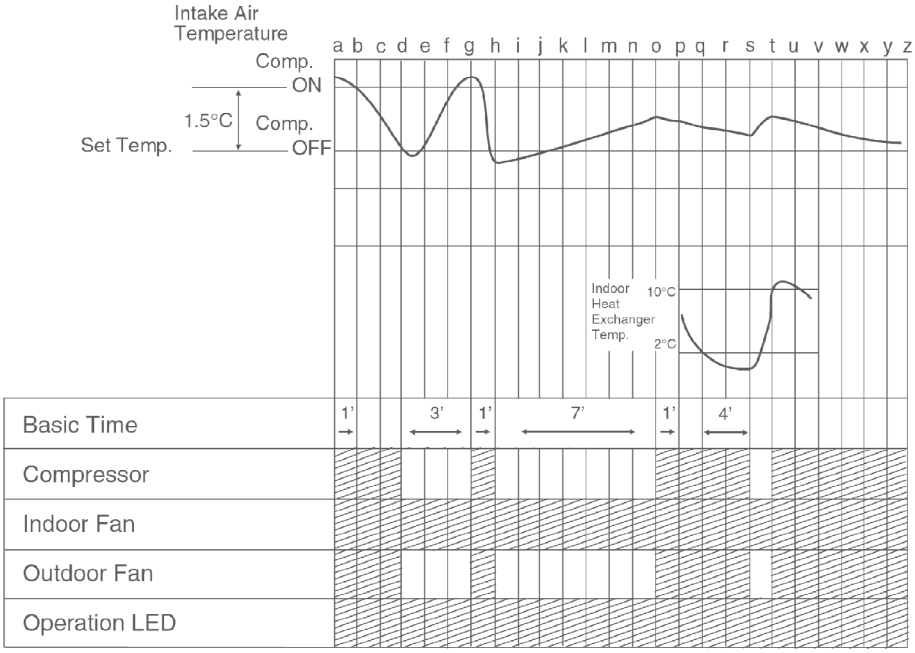
- **Fan speed rotates in the range of Hi to Me.**


Indoor Fan
※1
※2
SLo
SLo
SLo
SLo
stop
stop
stop
40"
30"
20"
160"
40"
30"
Comp.
ON
OFF
ON

※ 1 Fan Speed is Hi until the compressor stops (when the room temperature reaches setting temperature).

※ 2 Fan Speed is Me after the compressor restarts.

Cooling Operation Time Diagram


Intake Air Temperature
Comp. ON
1.5°C
Comp. OFF
Set Temp.
a b c d e f g h i j k l m n o p q r s t u v w x y z
Indoor Heat Exchanger Temp.
10°C
2°C
Basic Time
1'
3'
1'
7'
1'
4'
Compressor
Indoor Fan
Outdoor Fan
Operation LED

<Description of operation>

d – g : Time Delay Safety Control (waiting for 3 minutes)
g – h : 60 sec. Forced Operation
h – o : 7 min. Time Save Control
q – t : Anti Freezing Control
v – y : Outdoor Fan Control

▨ Operation

☐ Stop

8.2. Soft Dry Mode Operation

- The unit starts cooling operation until the room temperature reaches the setting temperature set on the Remote Control, and

then Soft Dry operation will start.

- **During Soft Dry operation, the Indoor Fan will operate at Lo- speed.**
- **Once room temperature reaches below Soft Dry OFF temperature. Indoor Fan, Compressor and Outdoor Fan stop for 6 minutes.**

Time Delay Safety Control

- **Once the compressor stops, it will not start for 3 minutes during Cooling operation.**

Anti-Freezing Control

- **Same as Anti-Freezing Control for Cooling Mode operation. (For Soft Dry region, 6 minutes waiting is valid during compressor stops.)**

Compressor Reverse Rotation Protection Control

- **Same as Compressor Reverse Rotation Protection Control for Cooling Mode Operation. (For Soft Dry region, 6 minutes waiting is valid during compressor stops.)**

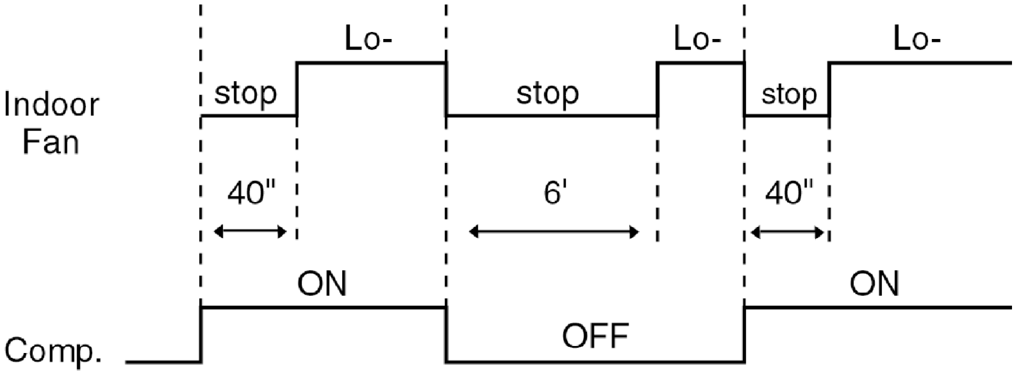
Anti-Dew Formation Control

- **Same as Anti-Dew Formation Control for Cooling Mode operation.**

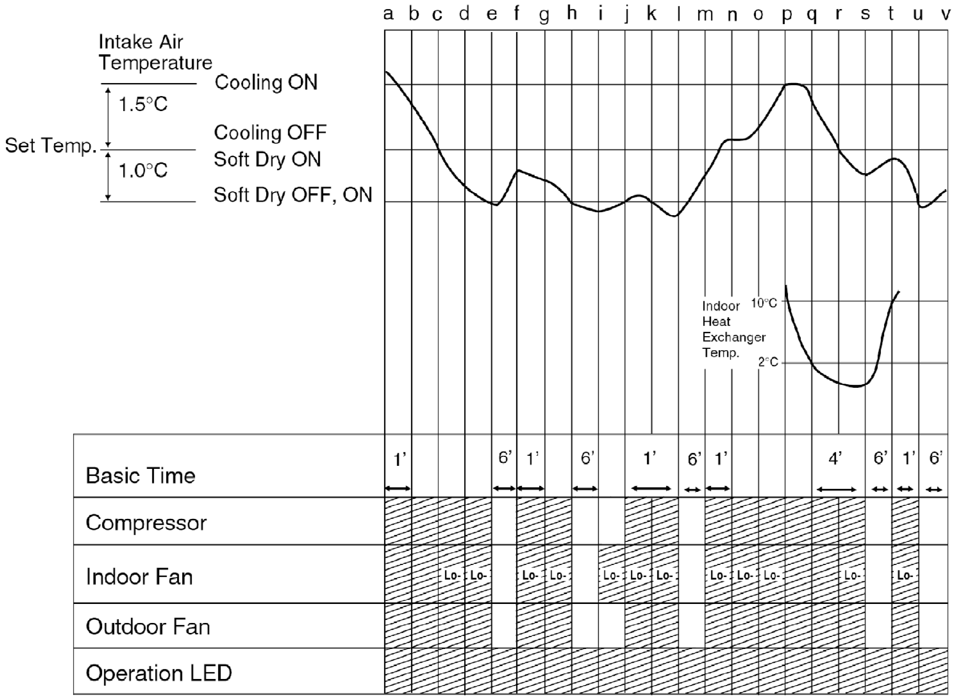
Automatic Fan Speed Mode

When Automatic Fan Speed is selected at Remote Control during Soft Dry operation.

- **Fan speed off and on at Lo- speed.**


Indoor Fan
Comp.
stop
Lo-
stop
Lo-
stop
Lo-
40"
6'
40"
ON
OFF
ON

Soft Dry Operation Time Diagram


a b c d e f g h i j k l m n o p q r s t u v
Intake Air Temperature
Cooling ON
1.5°C
Set Temp.
Cooling OFF
Soft Dry ON
1.0°C
Soft Dry OFF, ON
Indoor Heat Exchanger Temp.
10°C
2°C
Basic Time
1'
6'
1'
6'
1'
6'
1'
4'
6'
1'
6'
Compressor
Indoor Fan
Lo-
Outdoor Fan
Operation LED

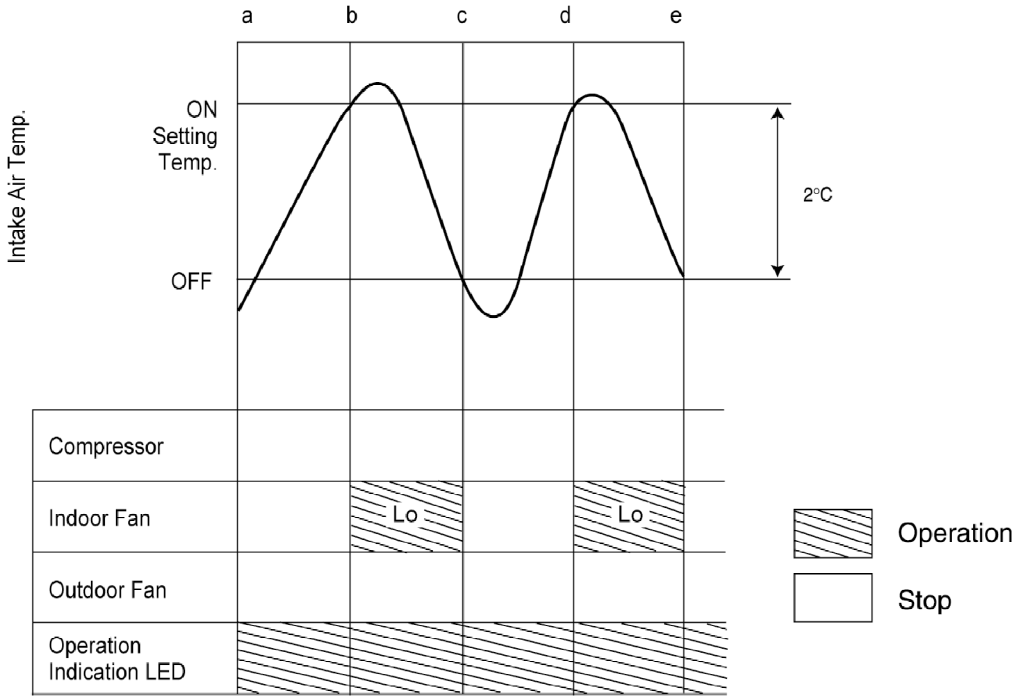
<Description of operation>
a – c, p~r : Cooling Operation
c – p : Soft Dry Operation
e – f : Soft Dry OFF
j – l : 60 sec. Forced Operation
q – t : Anti Freezing Control

▨ Operation
☐ Stop

8.3. Air Circulation Mode Operation

- When the temperature near the ceiling reaches the setting temperature, Air Circulation Mode operation commences at low airflow volume. It stops when the temperature drops to 2°C below the setting temperature. /

Air Circulation Mode Operation Time Diagram


a
b
c
d
e
Intake Air Temp.
ON
Setting
Temp.
OFF
2°C
Compressor
Indoor Fan
Lo
Lo
Outdoor Fan
Operation
Indication LED
Operation
Stop

8.4. Automatic Mode Operation

Standard for Determining Operation Mode

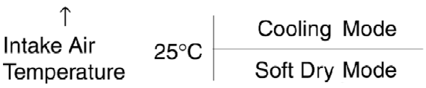
↑
Intake Air
Temperature
23°C
Cooling Mode
Soft Dry Mode

	Setting Temperature (Standard)
Cooling Mode	25°C
Soft Dry Mode	22°C

- **Indoor fan operates at SLo fan speed for 20 seconds.**
- **After judging indoor air temperature, the operation mode is determined and operation continued at the mode determined.**
- **After the operation mode has been determined, the mode does not change. However, Soft Dry mode operation includes Cooling mode operation.**
- **Room temperature adjustment.**
  The following are added to the setting temperature specified as above.

	Cooling	Soft Dry
Higher → +2°C	27°C	24°C
Standard → ±0°C	25°C	22°C
Lower → –2°C	23°C	20°C

- The mode judging temperature and standard setting temperature can be increased by 2°C, by open the circuit of JX1 at indoor electronic controller.



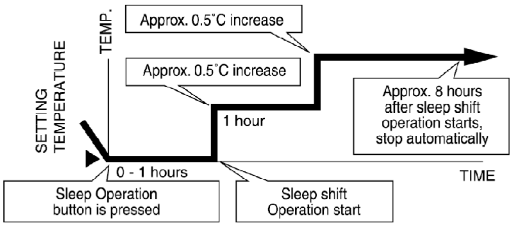
	Setting Temperature (Standard)
Cooling Mode	27°C
Soft Dry Mode	24°C

8.5. Sleep Mode Auto Operation

Cooling or Soft Dry Operation

Purpose is to obtain a comfortable room temperature while sleeping. When you press the SLEEP Mode, the following movement will start to avoid overcooling. /

- **Sleep shift operation starts, when the room temperature reaches the setting temperature or after 1 hour of operation.**
- **The setting temperature will be risen by 0.5°C at the start of operation and by 0.5°C one hour later.**
- **The airflow volume will automatically change to Low fan speed.**
- **Sleep Mode operation time is 8 hours, the operation will be stop after 8 hours.**
- **When used together with the Timer, the Timer has priority.**



8.6. Powerful Mode Operation

- **Purpose of this operation is to obtain the setting temperature**

quickly. /

- **When the Powerful Mode is set, the set temperature will be automatically decreased 3°C against the present setting temperature (Lower temperature: 16°C). /**
- **This operation automatically will be running under SHi Fan Speed (Cooling), SLo Fan Speed (Soft Dry). /**
- **Vertical Airflow Direction:-**
  - **In “Manual” setting, the vane will automatically swing down 10° lower than previous setting.**
  - **In “Auto” setting, the vane will automatically swing up and down. However the lower limit will be shifted 10° downward. /**
- **Powerful Mode will operate for 15 minutes only, after that it will shift back to previous operation mode. /**
- **Powerful Mode will stop if:-**
  - **Powerful mode button is pressed again.**
  - **Stopped by ON / OFF switch.**
  - **Timer OFF activates.**
  - **Economy mode button is pressed.**
  - **Sleep mode is pressed.**
  - **Operation mode button is changed.**

8.7. Economy Mode Operation

- **Purpose of this operation is to save or reduced electrical power consumption of the room air conditioner. /**
- **When the Economy Mode is set, the set temperature will be automatically increased 0.5°C against the preset setting temperature (Higher temperature: 30°C). /**
- **This operation automatically will be running under SLo Fan Speed. /**
- **Vertical Airflow Direction:-**
  In “Manual” or “Auto” setting, the vane will automatically change to Auto Air Swing. /
- **Economy Mode will stop if:-**
  - **Economy Mode button is pressed again.**
  - **Stopped by ON / OFF switch.**
  - **Timer OFF activates.**
  - **Powerful mode button is pressed.**

- Auto or Manual air swing button is pressed.
- Fan Speed control button is pressed.
- Sleep Mode button is pressed ON.
- Operation Mode is changed.

8.8. Random Auto Restart Control

- If there is a power failure, operation will be automatically restarted after 3 to 4 minutes when the power is resumed.
  It will start with previous operation mode and airflow direction. /
- Restart time is decided randomly using 4 parameter:-
  Intake air temperature, setting temperature, fan speed and Air Swing Blade position. /
- Auto Restart Control is not available when Timer or Sleep Mode is set. /
- This control can be omitted by open the circuit of JX2. (Refer Circuit Diagram) /

8.9. Indoor Fan Speed Control

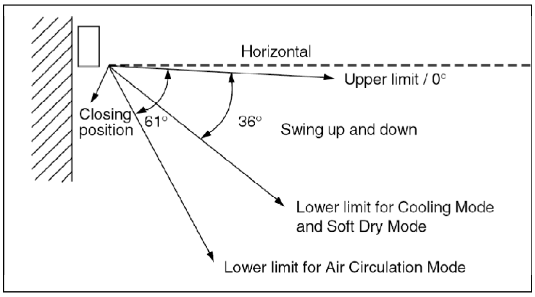
- Auto Fan Speed Control
  When set to Auto Fan Speed, the fan speed is adjusted between maximum and minimum setting as shown in the table. /
- Manual Fan Speed Control
  Basic fan speed adjustment (3 settings, from Lo to Hi) can be carried out by using the Fan Speed selection button at the remote control. /

Tap				S Hi	Hi	Me	Lo+	Lo	Lo-	S Lo	SSLo	Stop
Cooling	Normal	Airflow Volume Manual	Hi		○							
			Me			○						
			Lo					○				
		Airflow volume auto			○	○				○		○
		Sleep shift							○			
	Powerful	Airflow Volume Manual		○								
		Airflow volume auto		○								
		Sleep shift							○			
	Economy	Airflow Volume Manual								○		
		Airflow volume auto								○		
		Sleep shift							○			
Dry	Normal Powerful Economy	Airflow volume auto & Manual							○			○
		Sleep shift							○			
Air circulation		Normal						○				○
Auto Mode judgement										○		

8.10. Airflow Direction Control

Vertical Airflow Direction Auto-Control

- When set a Airflow Direction Auto-Control with remote control, the louver swings up and down as shown in the diagram.
- The louver does not swing when the Indoor Fan Motor stops during operation at the upper limit.
- When stopped with remote control, the discharge vent is reset, and stopped at the closing position.
- During Anti-dew condensation prevention, Airflow Direction Auto-control angle change from 0° - 36° to 12° - 28° under Cooling and Soft Dry operation mode.


Horizontal
Upper limit / 0°
Closing position
61°
36°
Swing up and down
Lower limit for Cooling Mode and Soft Dry Mode
Lower limit for Air Circulation Mode

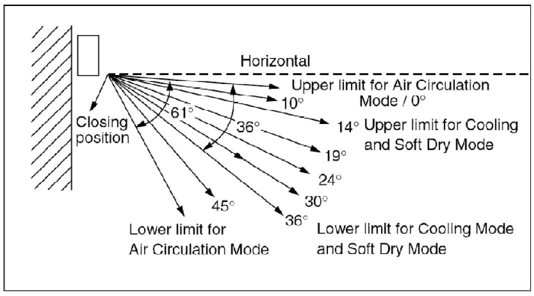
※1. There is no swinging while indoor fan motor is stopped during Cooling and Soft Dry operati

※2. In Air Circulation operation, when the intake air temperature reaches set temperature, the ai direction is changed from upper limit to lower limit. When the intake air temperature falls to than set temperature, the airflow direction is changed from lower limit to upper limit.

Vertical Airflow Direction manual Control

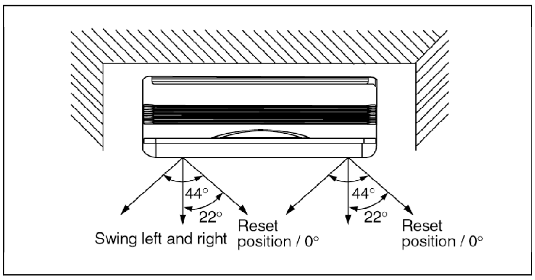
- When the manual Airflow Direction Selection Button is pressed, the automatic airflow is released and the airflow direction louver move up and down in the range shown in the diagram.
  The louver can be adjusted by pressing the button to the desired louver position.
- When the remote control is used to stop the operation, the discharge vent is reset, and stopped at the closing position.

- **During Anti-dew condensation prevention, Airflow Direction Manual control angle change from 14°, 19°, 24°, 30°, 36° to 16°, 18°, 20°, 22°, 24° under Cooling and Soft Dry operation mode.**


Horizontal
Upper limit for Air Circulation Mode / 0°
10°
61°
36°
Closing position
14° Upper limit for Cooling and Soft Dry Mode
19°
24°
30°
45°
36°
Lower limit for Air Circulation Mode
Lower limit for Cooling Mode and Soft Dry Mode

Horizontal Airflow Direction Auto-Control

- **When set a Airflow Direction Auto-Control with remote control, the vanes swings left and right as shown in the diagram.**
- **The vanes does not swing when the Indoor Fan Motor stops during operation at 22° angle.**
- **When stopped with remote control, the discharge vent is reset, and stopped at the reset position.**
- **During Anti-dew condensation prevention, Airflow Direction Auto-control angle change from 0° - 44° to 14° - 30° under Cooling and Soft Dry operation mode.**

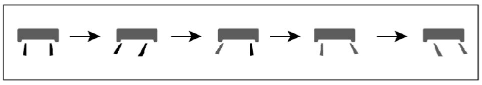

44°
22°
Swing left and right
Reset position / 0°
44°
22°
Reset position / 0°

※1. There is no swinging while indoor fan motor is stopped during Cooling and Soft Dry operati

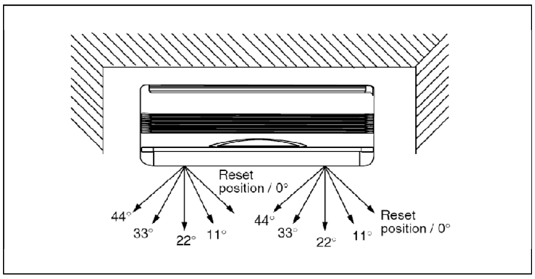
※2. In Air Circulation operation, when the intake air temperature reaches set temperature, the ai direction is Auto Swing left and right. When the intake air temperature falls to 2°C lower tha temperature, the airflow direction is stop at 22° angle.

Horizontal Airflow Direction manual Control

- When the manual Airflow Direction Selection Button is pressed, the automatic airflow is released and the airflow direction vane move left and right in the range shown in the diagram.
  The louver can be adjusted by pressing the button to the desired vane position.



- When the remote control is used to stop the operation, the vanes is reset, and stopped at reset position.
- During Anti-dew condensation prevention, Airflow Direction Manual control angle change from 0°, 11°, 22°, 33°, 44° to 14°, 18°, 22°, 26°, 30° under Cooling and Soft Dry operation mode.



8.11. Delay ON Timer Control

- When the Delayed ON Timer is set by using the remote control, the unit will start operate slightly before the set time, so that the room will reach nearly to the set temperature by the desired time.
- For Cooling and Soft Dry mode, the operation will start 15 minutes before the set time.
- For Automatic mode, the indoor fan will operate at SLo speed for 20 seconds, 15 minutes before the set time to detect the intake air temperature to determine the operation mode. The operation indication lamp will blink at this time.

8.12. Remote Control Signal Receiving Sound

- Long beep sound will be heard when:-
- Stopping the Air Conditioner using ON/OFF switch.
- Stopping the Sleep Mode.

- Stopping the Powerful Mode.
- Stopping the Economy Mode.
- Short beep sound will be heard for others.
- To switch off the beep sound:-
Press the “Automatic Operation Button” continuously for 10 seconds or more (“beep” “beep” will be heard at the 10th second). Repeat the above if you want to switch ON the beep sound.

※ **However, if the “Automatic Operation Button” has been pressed the Automatic operation will b activated.**
If you do not require this operation, you may change it by using the remote control.

9. Operating Instructions

10. Installation Instructions

Required tools for Installation Works			
1. Philips screw driver	5. Spanner	9. Gas leak detector	13. Multimeter
2. Level gauge	6. Pipe cutter	10. Measuring tape	14. Torque wrench 18 N.m (1.8 kgf.m) 55 N.m (5.5 kgf.m) 65 N.m (6.5 kgf.m)
3. Electric drill, hole core drill (ø70 mm)	7. Reamer	11. Thermometer	15. Gauge manifold
4. Hexagonal wrench (4 mm)	8. Knife	12. Megameter	

10.1. Safety Precautions

- Read the following “SAFETY PRECAUTIONS” carefully before installation.
- Electrical work must be installed by a licensed electrician. Be sure to use the correct rating of the power plug and main circuit for the model to be installed.
- The caution items stated here must be followed because these important contents are related to safety. The meaning of each indication used is as below.
Incorrect installation due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

⚠ **WARNING**	**This indication shows the possibility of causing death or serious injury.**

⚠ **CAUTION**	**This indication shows the possibility of causing injury or damage to prop**

The items to be followed are classified by the symbols:

⊘	**Symbol with background white denotes item that is PROHIBITED from do**

- Carry out test running to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference.

	⚠ **WARNING**
1.	**Engage dealer or specialist for installation. If installation done by the user is defective, it will c water leakage, electrical shock or fire.**
2.	**Install according to this installation instruction strictly. If installation is defective, it will cause leakage, electrical shock or fire.**
3.	**Use the attached accessories parts and specified parts for installation. Otherwise, it will cause to fall, water leakage, fire or electrical shock.**
4.	**Install at a strong and firm location which is able to withstand the set's weight. If the strength i enough or installation is not properly done, the set will drop and cause injury.**
5.	**For electrical work, follow the local national wiring standard, regulation and this installation instruction. An independent circuit and single outlet must be used. If electrical circuit capacity enough or defect found in electrical work, it will cause electrical shock or fire.**
6.	**Use the specified cable (2.5 mm2) and connect tightly for indoor/outdoor connection. Connect and clamp the cable so that no external force will be acted on the terminal. If connection or fixi perfect, it will cause heat-up or fire at the connection.**
7.	**Wire routing must be properly arranged so that control board cover is fixed properly. If control cover is not fixed perfectly, it will cause heat-up at connection point of terminal, fire or electric**
8.	**When carrying out piping connection, take care not to let air substances other than the specifi refrigerant go into refrigeration cycle. Otherwise, it will cause lower capacity, abnormal high p in the refrigeration cycle, explosion and injury.**
9.	**Do not damage or use unspecified power supply cord. Otherwise, it will cause fire or electrical shock.**
10.	**Do not modify the length of the power supply cord or use of the extension cord, and do not share the single outlet with other electrical appliances. Otherwise, it will cause fire or electrical shock.**

CAUTION

1. **The equipment must be earthed. It may cause electrical shock if grounding is not perfect.**

2. **Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire.**

3. **Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, v enter the room and damage the furniture.**

ATTENTION

1. **Selection of the installation location.**

   Select a installation location which is rigid and strong enough to support or hold the unit, and location for easy maintenance.

2. **Power supply connection to the room air conditioner.**

   Connect the power supply cord of the room air conditioner to the mains using one of the follo method.

   Power supply point shall be the place where there is ease for access for the power disconnect case of emergency.

   In some countries, permanent connection of this room air conditioner to the power supply is p

   1. Power supply connection to the receptacle using a power plug. / Use an approved 16A power plug with earth pin for 2.0HP (PC18C E1819K) and 20A for 2.5HP (PC24CK,SC24CK,E2419K) for the connection to the receptacle..

   2. Power supply connection to a circuit breaker for the permanent connection. Use an approved 16A circuit breaker for 2.0HP (PC18C E1819K) and 20A for 2.5HP (PC24CK, SC24CK, E2419K) for the permanent connection. It must be a double pole switch with a minimu contact gap..

3. **Do not release refrigerant.**

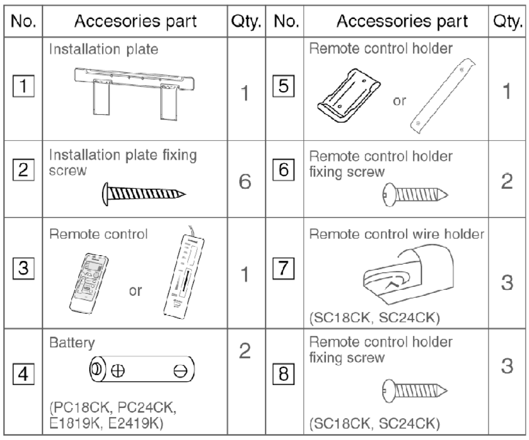
   Do not release refrigerant during piping work for installation, reinstallation and during repairin refrigeration parts. Take care of the liquid refrigerant, it may cause frostbite.

4. **Installation work.**

   It may need two people to carry out the installation work.

5. **Do not install this appliance in a laundry room or other location where water may drip from the etc.**

Attached accessories



No.	Accesories part	Qty.	No.	Accessories part	Qty.
1	Installation plate	1	5	Remote control holder	1
2	Installation plate fixing screw	6	6	Remote control holder fixing screw	2
3	Remote control	1	7	Remote control wire holder (SC18CK, SC24CK)	3
4	Battery (PC18CK, PC24CK, E1819K, E2419K)	2	8	Remote control holder fixing screw (SC18CK, SC24CK)	3

Applicable piping kit
CZ-3F5, 7AEN (PC18CK, SC18CK, E1819K)
CZ-4F5, 7, 10AN (PC24CK, SC24CK, E2419K)

SELECT THE BEST LOCATION

INDOOR UNIT

- **There should not be any heat source or steam near the unit.**
- **There should not be any obstacles blocking the air circulation.**
- **A place where air circulation in the room is good.**
- **A place where drainage can be easily done.**
- **A place where noise prevention is taken into consideration.**
- **Do not install the unit near the door way.**
- **Ensure the spaces indicated by arrows from the wall, ceiling, fence or other obstacles.**
- **Recommended installation height for indoor unit shall be at least 2.3 m.**

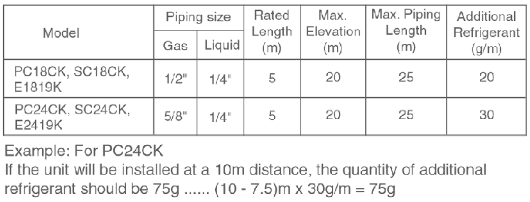
OUTDOOR UNIT

- **If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.**
- **There should not be any animal or plant which could be affected by hot air discharged.**
- **Keep the spaces indicated by arrows from wall, ceiling, fence or other obstacles.**
- **Do not place any obstacles which may cause a short circuit of the discharged air.**

- **If piping length is over the common length, additional refrigerant should be added as shown in the table.**

REMOTE CONTROL

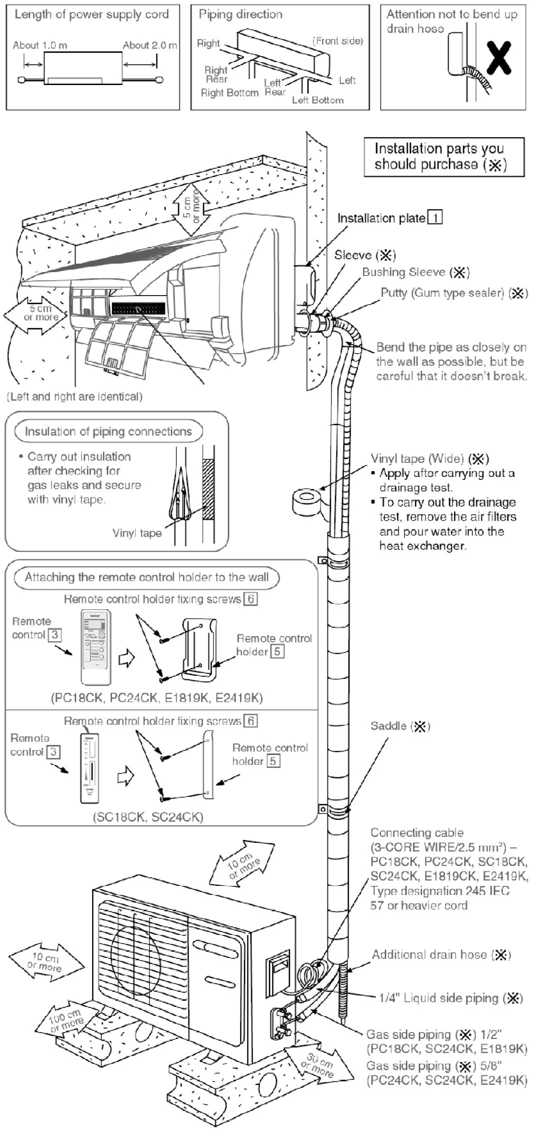
- **Do not install at places where there is direct sunlight or near any heat sourc.**



Model	Piping size		Rated Length (m)	Max. Elevation (m)	Max. Piping Length (m)	Additional Refrigerant (g/m)
	Gas	Liquid				
PC18CK, SC18CK, E1819K	1/2"	1/4"	5	20	25	20
PC24CK, SC24CK, E2419K	5/8"	1/4"	5	20	25	30

Example: For PC24CK
If the unit will be installed at a 10m distance, the quantity of additional refrigerant should be 75g ...... (10 - 7.5)m x 30g/m = 75g

Indoor/Outdoor Unit Installation Diagram


Length of power supply cord
About 1.0 m
About 2.0 m
Piping direction
Right
(Front side)
Right Rear
Right Bottom
Left Rear
Left
Left Bottom
Attention not to bend up drain hose
Installation parts you should purchase (※)
Installation plate 1
Sleeve (※)
Bushing Sleeve (※)
Putty (Gum type sealer) (※)
5 cm or more
5 cm or more
Bend the pipe as closely on the wall as possible, but be careful that it doesn't break.
(Left and right are identical)
Insulation of piping connections
• Carry out insulation after checking for gas leaks and secure with vinyl tape.
Vinyl tape
Vinyl tape (Wide) (※)
• Apply after carrying out a drainage test.
• To carry out the drainage test, remove the air filters and pour water into the heat exchanger.
Attaching the remote control holder to the wall
Remote control holder fixing screws 6
Remote control 3
Remote control holder 5
(PC18CK, PC24CK, E1819K, E2419K)
Remote control holder fixing screws 6
Remote control 3
Remote control holder 5
(SC18CK, SC24CK)
Saddle (※)
Connecting cable (3-CORE WIRE/2.5 mm²) – PC18CK, PC24CK, SC18CK, SC24CK, E1819K, E2419K, Type designation 245 IEC 57 or heavier cord
10 cm or more
10 cm or more
100 cm or more
30 cm or more
Additional drain hose (※)
1/4" Liquid side piping (※)
Gas side piping (※) 1/2" (PC18CK, SC24CK, E1819K)
Gas side piping (※) 5/8" (PC24CK, SC24CK, E2419K)

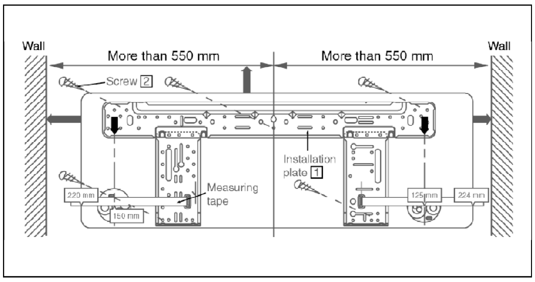
- This illustration is for explanation purposes only. / The indoor unit will actually face a different way.

10.2. INDOOR UNIT

10.2.1. SELECT THE BEST LOCATION / (Refer to "Select the best location" section)

10.2.2. HOW TO FIX INSTALLATION PLATE

The mounting wall is strong and solid enough to prevent it from the vibration.



**The centre of installation plate should be at more than 550 mm at right and left of the wall.
The distance from installation plate edge to ceiling should more than 67 mm.
From installation plate left edge to unit's left side is 47 mm.
From installation plate right edge to unit's right is 73 mm.**

Ⓑ : For left side piping, piping connection for liquid should be about 126 mm from this line.

: For left side piping, piping connection for gas should be about 174 mm from this line.

: For left side piping, piping connecting cable should be about 984 mm from this line.

1. Mount the installation plate on the wall with 5 screws or more. / (If mounting the unit on the concrete wall consider using anchor bolts.)

- Always mount the installation plate horizontally by aligning the marking-off line with the thread and using a level gauge.

2. Drill the piping plate hole with ø70 mm hole-core drill.

- Line according to the arrows marked on the lower left and right side of the installation plate. The meeting point of the extended line is the centre of the hole. Another method is by putting measuring tape at position as shown in the diagram above. The hole centre is obtained by measuring the distance namely 150 mm and 125 mm for left and right hole respectively.

- Drill the piping hole at either the right or the left and the hole should be slightly slanted to the outdoor side.

10.2.3. TO DRILL A HOLE IN THE WALL AND INSTALL A SLEEVE OF PIPING

1. Insert the piping sleeve to the hole.

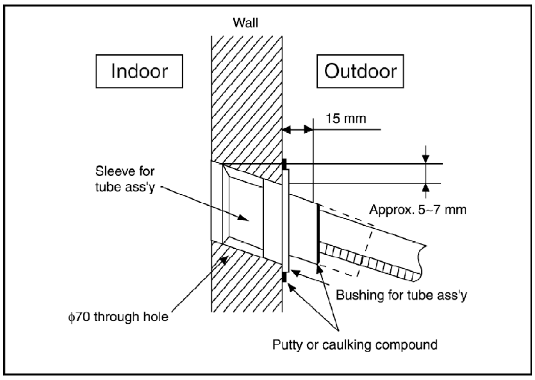
2. Fix the bushing to the sleeve.

3. Cut the sleeve until it extrudes about 15 mm from the wall.

Caution

When the wall is hollow, please be sure to use the sleeve for tube ass'y to prevent dangers caused by mice biting the connecting cable.

4. Finish by sealing the sleeve with putty or caulking compound at the final stage.


Wall
Indoor
Outdoor
15 mm
Sleeve for tube ass'y
Approx. 5~7 mm
Bushing for tube ass'y
ϕ70 through hole
Putty or caulking compound

10.2.4. INDOOR UNIT INSTALLATION

1. For the right rear piping

- Pull out the Indoor piping
- Install the Indoor Unit
- Secure the Indoor Unit
- Insert the connecting cable

2. For the right and right bottom piping

- Pull out the Indoor piping
- Install the Indoor Unit
- Insert the connecting cable
- Secure the Indoor Unit

3. For the embedded piping

Replace the drain hose

Bend the embedded piping

- Use a spring bender or equivalent to bend the piping so that the piping is not crushed.

Install the Indoor Unit

Cut and flare the embedded piping

- When determing the dimension of the piping, slide the unit all the way to the left on the installation plate.
  Refer to the section "Cutting and flaring the piping".

Pull the connecting cable into Indoor Unit

- The inside and outside connecting cable can be connected without removing the front grille.

Connect the piping

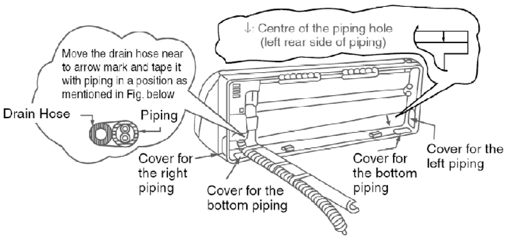
- Please refer to "Connecting the piping" column in outdoor unit section. (Below steps are done after connecting the outdoor piping and gas-leakage confirmation.)

Insulate and finish the piping

- Please refer to "Piping and finishing" column of outdoor section and "Insulation of piping connections" column as mentioned in Indoor/ Outdoor Unit Installation.

Secure the Indoor Unit

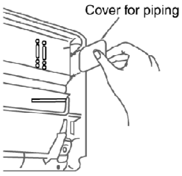
Pull out the piping and drain hose


↓: Centre of the piping hole
(left rear side of piping)
Move the drain hose near to arrow mark and tape it with piping in a position as mentioned in Fig. below
Drain Hose
Piping
Cover for the right piping
Cover for the bottom piping
Cover for the bottom piping
Cover for the left piping

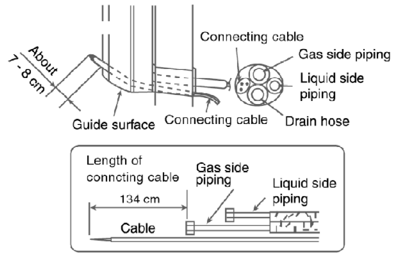
How to keep the cover

In case of the cover is cut, keep the cover at the rear of chassis as shown in the illustration for future reinstallation.

(Left, right and 2 bottom covers for piping)

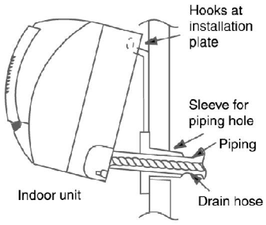

Cover for piping

Insert the connecting cable


About
7 - 8 cm
Connecting cable
Gas side piping
Liquid side piping
Guide surface
Connecting cable
Drain hose
Length of conncting cable
134 cm
Cable
Gas side piping
Liquid side piping

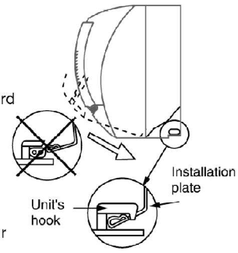
Install the Indoor Unit

Hook the indoor unit onto the upper portion of installation plate (Engage the indoor unit with the upper edge of the installation plate). Ensure the hooks are properly seated on the installation plate by moving in left and right.

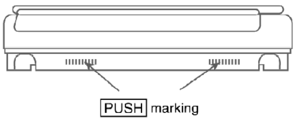

Hooks at installation plate
Sleeve for piping hole
Piping
Indoor unit
Drain hose

Secure the Indoor Unit

1. Tape the extra power supply cord in a bundle and keep it behind the chassis.
   - Ensure that the power supply cord is not clamped in between the unit's hook (2 positions) and installation plate.
2. Press the lower left and right side of the unit against the installation plate until hooks engages with their slots (sound click).


Installation plate
Unit's hook

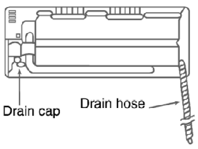
To take out the unit, push the PUSH marking at the bottom unit, and pull it slightly towards you to disengage the hooks from the unit.

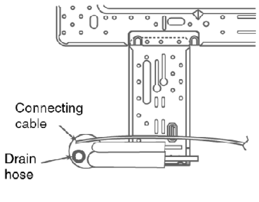

PUSH marking

(This can be used for left rear piping & left bottom piping also.)

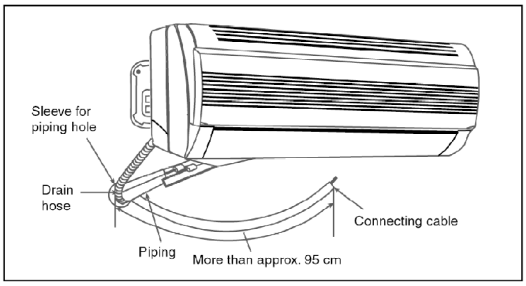
Exchange the drain hose and the cap

Refer view for left piping installation

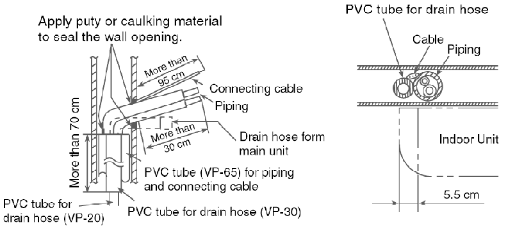

Drain cap
Drain hose


Connecting cable
Drain hose

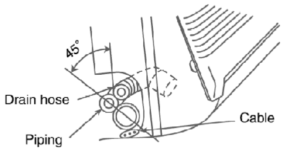
Adjust the piping slightly downwards


Sleeve for piping hole
Drain hose
Piping
More than approx. 95 cm
Connecting cable

- How to pull the piping and drain hose out, in case of the embedded piping.


Apply puty or caulking material to seal the wall opening.
More than 95 cm
Connecting cable
Piping
More than 70 cm
More than 30 cm
Drain hose form main unit
PVC tube (VP-65) for piping and connecting cable
PVC tube for drain hose (VP-20)
PVC tube for drain hose (VP-30)
PVC tube for drain hose
Cable
Piping
Indoor Unit
5.5 cm

- In case of left piping how to insert the connecting cable and drain hose.


45°
Drain hose
Piping
Cable

(For the right piping, follow the same procedure)

10.2.5. CONNECT THE CABLE TO THE INDOOR UNIT

1. **The inside and outside connecting cable can be connected without removing the front grille.**
2. **Connecting cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 3 (PC18CK, PC24CK, SC18CK, SC24CK, E1819K, E2419K) × 2.5 mm^2 flexible cord, type designation 245 IEC 57 or heavier cord.**

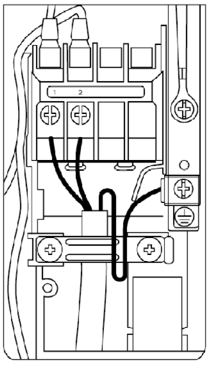
- Ensure the color of wires of outdoor unit and the terminal Nos. are the same to the indoor's respectively.
- Earth lead wire shall be longer than the other lead wires as shown in the figure for the electrical safety in case of the slipping out of the cord from the anchorage. /

CS/CU-PC18CK, CS/CU-PC24CK, CS/CU-E1819K, CS/CU-E2419K,
CS-SC18CK/CU-PC18CK, CS-SC24CK/CU-PC24CK

Terminals on the indoor unit	1	2	⏚
Color of wires	░	░	▓
Terminals on the outdoor unit	1	2	⏚

- Secure the cable onto the control board with the holder

(clamper).

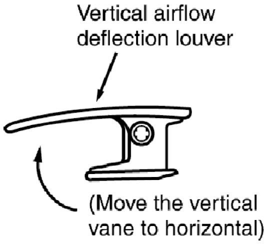


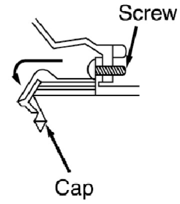
HOW TO TAKE OUT FRONT GRILLE

Please follow the steps below to take out front grille if necessary such as when servicing.

1. **Set the vertical airflow direction louver to the horizontal position.**
2. **Slide down the two caps on the front grille as shown in the illustration below, and then remove the two mounting screws.**
3. **Pull the lower section of the front grille towards you to remove the front grille.**

When reinstalling the front grille, first set the vertical airflow direction louver to the horizontal position and then carry out above steps 2 - 3 in the reverse order.

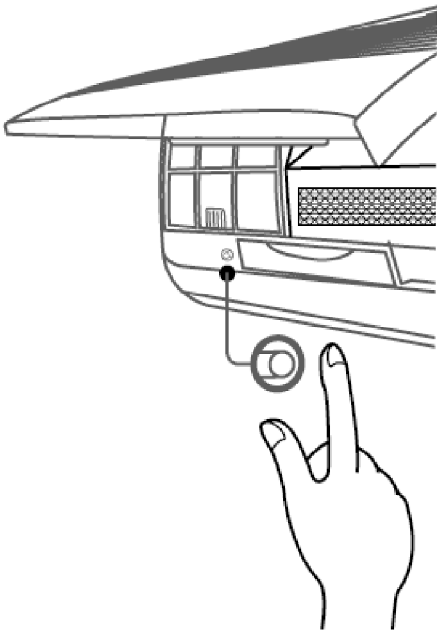

Vertical airflow deflection louver
(Move the vertical vane to horizontal)



AUTO SWITCH OPERATION

(PC18CK, PC24CK, E1819K, E2419K ONLY)
The below operations will be performed by pressing the “AUTO” switch.

1. **AUTO OPERATION MODE**
   The Auto operation will be activated immediately once the Auto Switch is pressed.
2. **TEST RUN OPERATION (FOR PUMP DOWN/SERVICING PURPOSE)**
   The Test Run operation will be activated if the Auto Switch is pressed continuously for more than 5 sec. to below 10 sec.. A “pep” sound will occur at the fifth sec., in order to identify the starting of Test Run operation
3. **REMOTE CONTROLLER RECEIVING SOUND ON/OFF**
   The ON/OFF of Remote Controller receiving sound can be change over by pressing the “AUTO” Switch continuously for 10 sec. and above. A “pep”, “pep” sound will occur at the tenth sec., in order to indicate the “ON/OFF” change over of remote control receiving sound.



HOW TO INSTALL WIRED REMOTE CONTROL

(SC18CK, SC24CK ONLY)

1. **Select the best location.**
   (Refer to "Select the Best Laction" Section)
2. **Install the wired remote control holder to the wall by fixing it with two screws (Refer to"Diagram A").**
3. **Mount the wired remote control. (Refer to "Diagram B").**

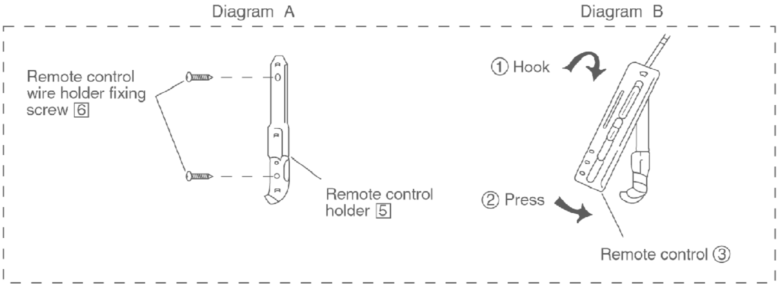


Diagram A
Diagram B
Remote control wire holder fixing screw 6
Remote control holder 5
① Hook
② Press
Remote control ③

Note: Install the remote control less than 1.5m from the unit and within user's reach. It is reccommended to use the attached cord holders for good finish when the cord is fixed on a wall or a pillar.

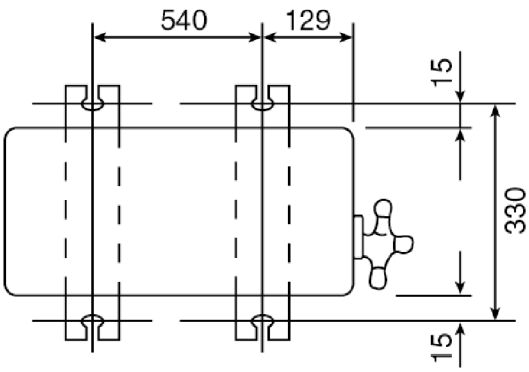
10.3. OUTDOOR UNIT

10.3.1. SELECT THE BEST LOCATION / (Refer to "Select the best location" section)

10.3.2. INSTALL THE OUTDOOR UNIT

- **After selecting the best location, start installation according to Indoor/Outdoor Unit Installation Diagram.**

1. **Fix the unit on concrete or rigid frame firmly and horizontally by bolt nut. (ø10 mm).**
2. **When installing at roof, please consider strong wind and earthquake. Please fasten the installation stand firmly with bolt or nails.**



10.3.3. CONNECTING THE PIPING

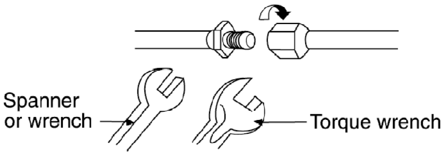
Connecting The Piping To Indoor Unit

Please make flare after inserting flare nut (locate at joint portion of tube assembly) onto the copper pipe. (In case of using long piping)

Connect the piping

- **Align the center of piping and sufficiently tighten the flare nut with fingers.**
- **Further tighten the flare nut with torque wrench in specified torque as stated in the table.**

Connecting The Piping To Outdoor Unit



MODEL	Piping size (Torque)	
	Gas	Liquid
PC18CK, SC24CK, E1819K	3/8” (42 N.m)	1/4” (18 N.m)
PC24CK, SC24CK, E2419K	1/2” (55 N.m)	1/4” (18 N.m)

Decide piping length and then cut by using pipe cutter. Remove burrs from cut edge. Make flare after inserting the flare nut (located at valve) onto the copper pipe.

Align center of piping to valves and then tighten with torque wrench to the specified torque as stated in the table.

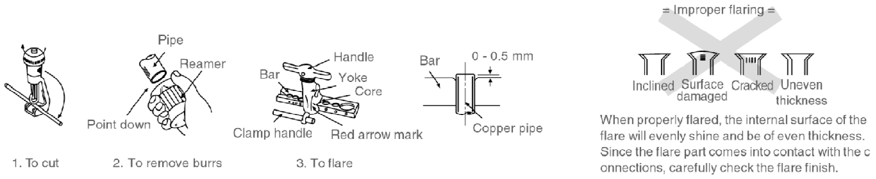
CUTTING AND FLARING THE PIPING

1. Please cut using pipe cutter and then remove the burrs.

2. Remove the burrs by using reamer. If burrs is not removed, gas

leakage may be caused.
Turn the piping end down to avoid the metal powder entering the pipe.

3. **Please make flare after inserting the flare nut onto the copper pipes.**


Pipe
Reamer
Point down
Handle
Bar
Yoke
Core
Clamp handle
Red arrow mark
Bar
0 - 0.5 mm
Copper pipe
= Improper flaring =
Inclined
Surface damaged
Cracked
Uneven thickness

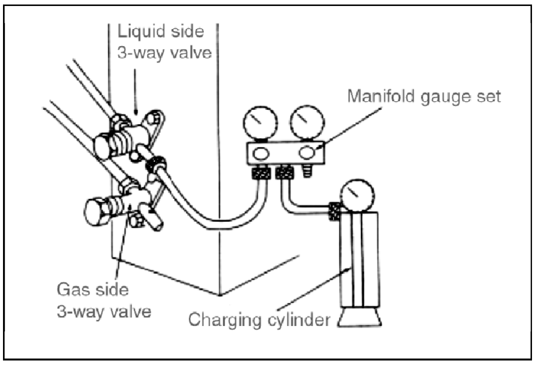
1. To cut 2. To remove burrs 3. To flare

When properly flared, the internal surface of the flare will evenly shine and be of even thickness. Since the flare part comes into contact with the connections, carefully check the flare finish.

10.3.4. AIR PURGING OF THE PIPING AND INDOOR UNIT

1) Checking a gas leakage

1. **Remove the service-port cap from the 3-way valves.**
2. **Connect the Manifold gauge set to the service port of Liquid side 3-way valve.**
3. **Connect the Charging Cylinder to the Manifold gauge set and open the valve of the Cylinder.**
4. **Open the low pressure side valve of the Manifold gauge for approx. 10 seconds and then close.**
5. **Check gas-leakage of the connecting portion of pipings with the gas-leak detector.**


Liquid side 3-way valve
Manifold gauge set
Gas side 3-way valve
Charging cylinder

<For the left pipings>
1. Measure the pressure.
2. Keep it 5-10 minutes.

- Ensure if the pressure indicated on the gauge is as same as that of

measured at first time.

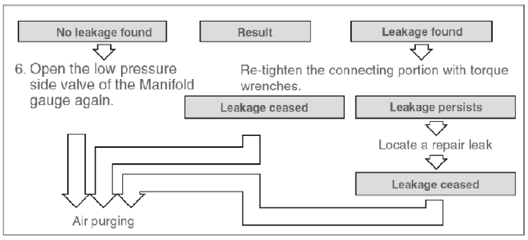
2) Air purging

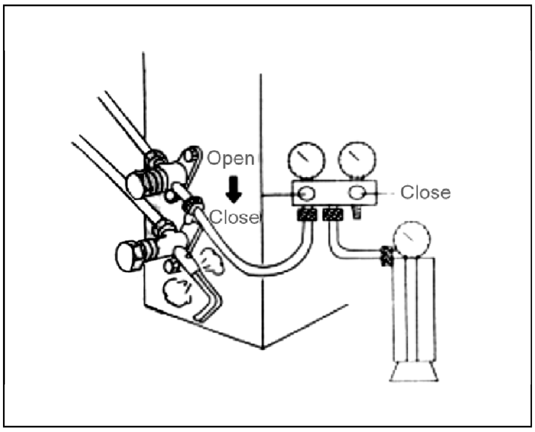
The air remaining in the Refrigeration cycle which contains moisture may cause malfunction on the Compressor.

1. **To purge the air, push the pin on the Gas side 3-way valve for three seconds with a Hexagonal wrench and set it free for one minute.**

   - Repeat this for three times.

2. **To balance the refrigerant, close the low pressure side valve on the Manifold gauge and release refrigerant from the piping through service port until the gauge indicates 0.5 - 0.3 MPa.**
3. **Set both 3-way valves to open position with the Hexagonal wrench for the unit operation.**

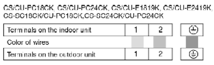

No leakage found
Result
Leakage found
6. Open the low pressure side valve of the Manifold gauge again.
Re-tighten the connecting portion with torque wrenches.
Leakage ceased
Leakage persists
Locate a repair leak
Leakage ceased
Air purging


Open
Close
Close

10.3.5. CONNECT THE CABLE TO THE OUTDOOR UNIT

1. **Remove the control board cover from the unit by loosening the screw.**

2. **Connecting cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 3 (PC18CK, PC24CK, SC18CK, SC24CK, E1819K, E2419K) × 2.5 mm^2 flexible cord, type designation 245 IEC 57 or heavier cord.**



CS/CU-PC18CK, CS/CU-PC24CK, CS/CU-E1819K, CS/CU-E2419K,
CS-SC18CK/CU-PC18CK,CS-SC24CK/CU-PC24CK

Terminals on the indoor unit	1	2	⏚
Color of wires	▨	▨	▨
Terminals on the outdoor unit	1	2	⏚

3. **Secure the cable onto the control board with the holder (clamper).**
4. **Attach the control board cover back to the original position with the screw.**

10.3.6. PIPE INSULATION

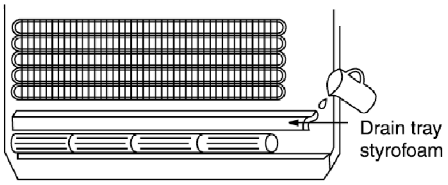
1. **Please carry out insulation at pipe connection portion as mentioned in Indoor/Outdoor Unit Installation Diagram. Please wrap the insulated piping end to prevent water from going inside the piping.**
2. **If drain hose or connecting piping is in the room (where dew may form), please increase the insulation by using POLY-E FOAM with thickness 6 mm or above.**

CHECK THE DRAINAGE

- Open front panel and remove air filters. / (Drainage checking can be carried out without removing the front grille.)

- Pour a glass of water into the drain tray-styrofoam.

- Ensure that water flows out from drain hose of the indoor unit.

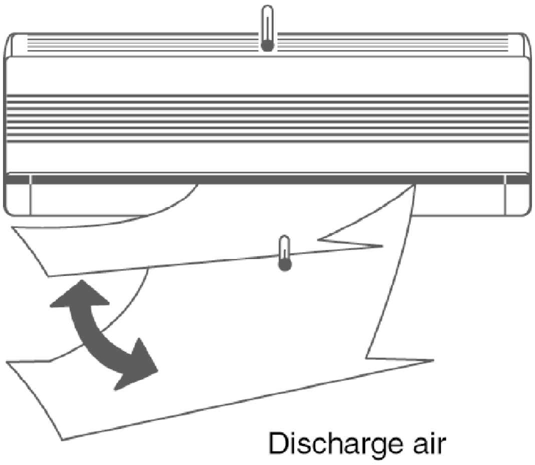


EVALUATION OF THE PERFORMANCE

- Operate the unit at cooling operation mode for fifteen minutes or more.

- Measure the temperature of the intake and discharge air.

- Ensure the difference between the intake temperature and the discharge is more than 8°C.



CHECK ITEMS

☐ **Is there any gas leakage at flare nut connections?**

☐ **Has the heat insulation been carried out at flare nut connection?**

☐ **Is the connecting cable being fixed to terminal board firmly?**

☐ **Is the connecting cable being clamped firmly?**

☐ **Is the drainage OK?**
(Refer to "Check the drainage" section)

☐ **Is the earth wire connection properly done?**

☐ **Is the indoor unit properly hooked to the installation plate?**

☐ **Is the power supply voltage complied with rated value?**

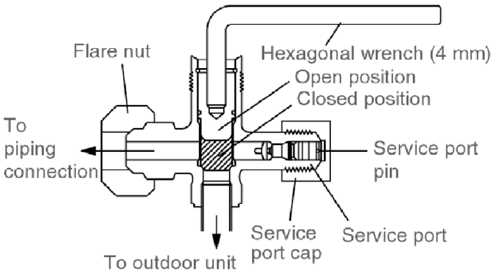
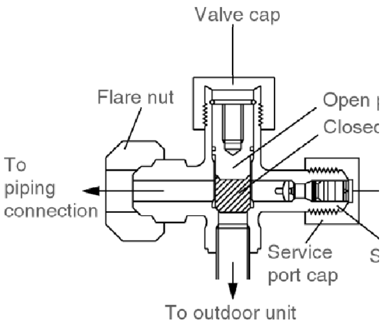
☐ **Is there any abnormal sound?**

☐ **Is the cooling operation normal?**

☐ **Is the thermostat operation normal?**

☐ **Is the remote control's LCD operation normal? (PC18CK, PC24CK, E1819K, E2419K)**

11. 3-way Valve

	3-way Valve (Liquid Side)		**3-way Valve (Gas Sid**	
	 Flare nut Hexagonal wrench (4 mm) Open position Closed position To piping connection Service port pin Service port cap Service port To outdoor unit		 Valve cap Flare nut Open Close To piping connection Service port cap To outdoor unit	
Works	**Shaft Position**	**Service Port**	**Shaft Position**	**Servic**
Shipping	**Closed (With valve cap)**	**Closed (With cap)**	**Closed (With valve cap)**	**Clo (With**
(Installation and Re-installation)	**Closed (Clockwise)**	**Open (Connected manifold gauge w/charging cylinder)**	**Closed (Clockwise)**	**Op (Pus**

	3-way Valve (Liquid Side)		3-way Valve (Gas Sid	
Operation	Open (With valve cap)	Closed (With cap)	Open (With valve cap)	Clo (Wit
Pumping down (Transferring)	Closed (Clockwise)	Closed (With cap)	Open (Counter-Clockwise)	Op (Conn manifol
Evacuation (Servicing)	Open (Counter-clockwise)	Open (Connected manifold gauge)	Open (Counter-clockwise)	Op (Conn manifol
Gas charging (Servicing)	Open (Counter-clockwise)	Open (Connected manifold gauge)	Open (Counter-clockwise)	Op (Conn manifol
Pressure check (Servicing)	Open (Counter-clockwise)	Closed (With cap)	Open (Counter-clockwise)	Op (Conn manifol
Gas releasing (Servicing)	Open (Counter-clockwise)	Open (Connected manifold gauge)	Open (Counter-clockwise)	Op (Conn manifol

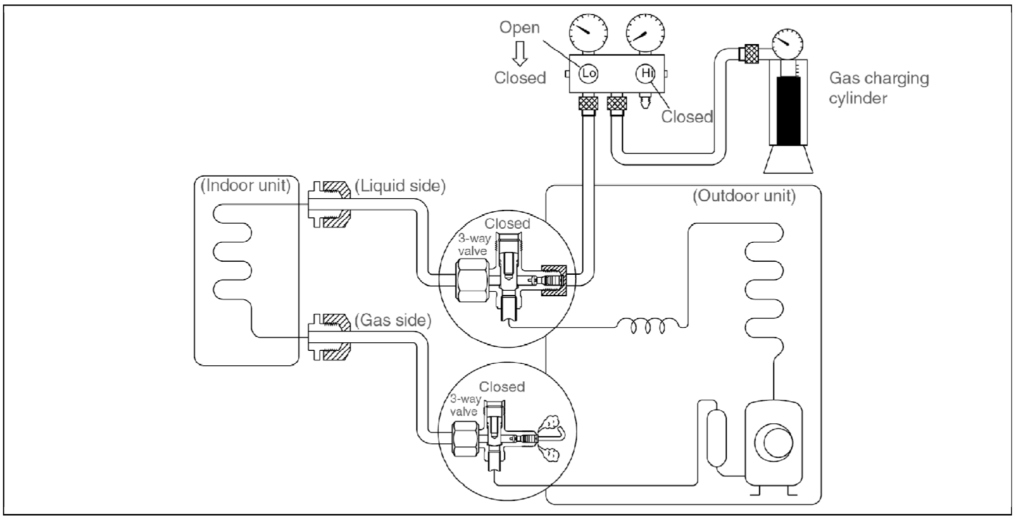
11.1. Air Purging of the Piping and Indoor Unit

11.1.1. Air purging

Required tools:

Hexagonal wrench, adjustable wrench, torque wrenches, wrench to hold the joints, gas leak detector, and charging set.

The air in the indoor unit and in the piping must be purged. If air remains in the refrigeration pipes, it will affect the compressor, reduce the cooling capacity, and could lead to a malfunction.


Open
Closed
Lo
Hi
Closed
Gas charging cylinder
(Indoor unit)
(Liquid side)
(Outdoor unit)
Closed
3-way valve
(Gas side)
Closed
3-way valve

Service port cap

Be sure, using a torque wrench to tighten the service port nut (after using the service port), so th prevents the gas leakage from the refrigeration cycle.

Procedure:

1. **Recheck the piping connections.**
2. **Open the valve caps and service port caps for both / 3-way valves.**
3. **Connect the charging cylinder to the manifold gauge as shown above.**
4. **Open the valve of the low pressure side of manifold gauge counterclockwise for 10 seconds, and then close it.**
5. **Check for gas leakage.**
    - **Check the flare connections for gas leakage.**
6. **Purge the air from the system.**
    - **Open the Low pressure side valve of the manifold gauge.**
    - **Press the service port pin with the hexagonal wrench to purge the air for three seconds and then wait for one minute. / Repeat this three times or more.**
7. **Balance the refrigerant in the pipings and the indoor unit.**
    - **Close the Low pressure side valve of the manifold gauge.**
    - **Press the service port pin with the hexagonal wrench to**

release the refrigerant until the gauge indicates 0.1 to 0.3 MPa.

8. Use torque wrench to tighten the service port cap to a torque of 18 N.m.
9. Set the both 3-way valves to the open position.
10. Mount the valve caps to the 3-way valves.
11. Check for gas leakage.

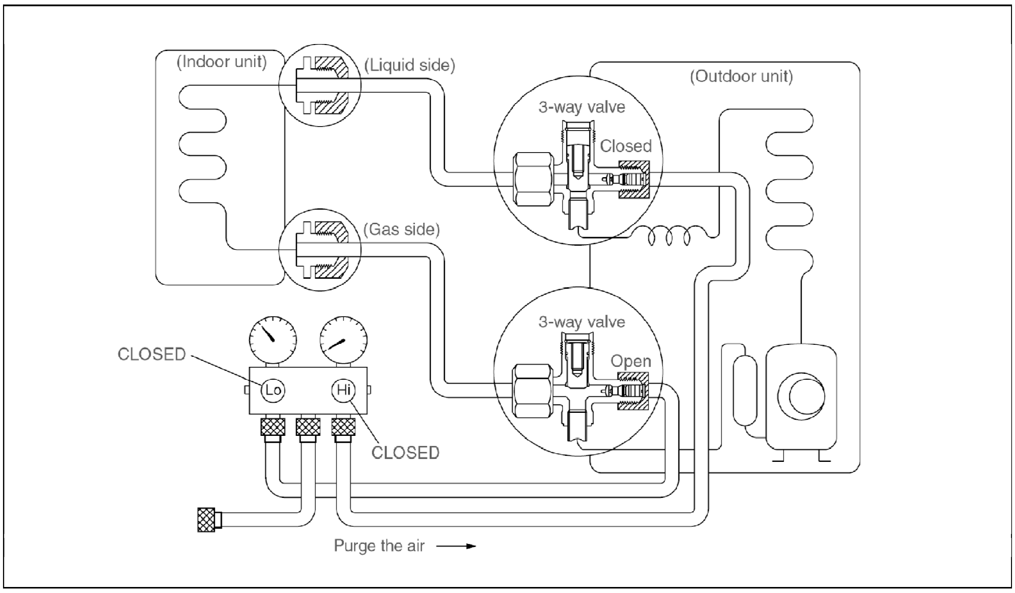
- At this time, especially check for gas leakage from the both 3-way valve’s caps, and from the service port caps.

Caution

If gas leakage is discovered in step (3) above, take the following measures:

1. Re-tighten the connecting portion with torque wrenches.
   If the leakage ceases, continue the works from step (4).
2. Locate and repair the leak. (Gas leak detector)
   Repeat the works from step (1).

11.1.2. Pumping down


(Indoor unit)
(Liquid side)
(Outdoor unit)
3-way valve
Closed
(Gas side)
3-way valve
Open
CLOSED
Lo
Hi
CLOSED
Purge the air

Procedure:

1. Confirm that both the 3-way valves are set to the open position.

   - Remove the valve caps and confirm that the valve caps are in the raised position.
   - Be sure to use a hexagonal wrench to operate the valve stems.

2. Operate the unit for 10 to 15 minutes.
3. Stop operation and wait for 3 minutes, then connect the manifold gauge to the service port of the 3-way valve as shown above.

   - Connect the manifold gauge to the gas side service port.

4. Air purging of the charge hose.

   - Open the Low pressure side valve of manifold gauge slightly to purge air from the charge hose.

5. Set the liquid side (High side) 3-way valve to the close position.
6. Operate the air conditioner at the cooling cycle and stop it when the gauge indicates 0.1 MPa.

   - If the unit cannot be operated at the cooling (weather is rather cool), press the Pump Down switch on the Indoor unit.
   - So that the unit can be operated.

7. Immediately set the gas side (Low side) 3-way valve to the close position.

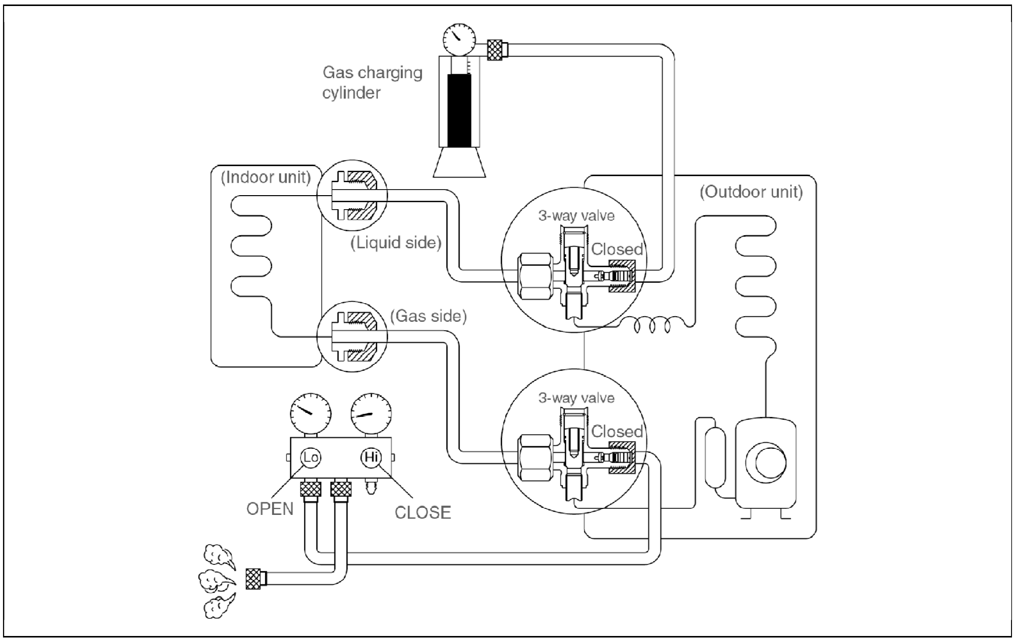
   - Do this quickly so that the gauge ends up indicating 0.1 0.3 MPa.

8. Disconnect the manifold gauge, and mount both the / 3-way valve’s caps and the service port caps.

   - Use torque wrench to tighten the service port nut to a torque of 18 N.m.
   - Be sure to check for gas leakage.

11.1.3. Re-air purging

(Re-installation)


Gas charging cylinder
(Indoor unit)
(Liquid side)
(Gas side)
3-way valve
Closed
(Outdoor unit)
3-way valve
Closed
Lo
Hi
OPEN
CLOSE

Procedure:

1. **Remove the cap nut from 3-way valves.**

   - **Remove the cap nut from 3-way valves after carefully checked whether the piping connection was properly and certainly done.**

2. **Confirm that valve in both 3-way valves are set to the CLOSE.**
3. **Connect the gas cylinder to the liquid-side (high-pressure) 3-way valve and the charge set to the gas side (low-pressure) 3-way valve.**

   - **Remove the flare nut from the service ports to connect the manifold gauge and gas cylinder.**
   - **Close the valves on the gas cylinder and manifold gauge.**

4. **Air purging.**

   - **Open the valve on the gas cylinder.**
   - **Open the valve on the manifold gauge, discharge for three seconds and wait for one minute. Repeat this three times.**

5. **Check for gas leakage.**

- Check the flare connections for gas leakage.

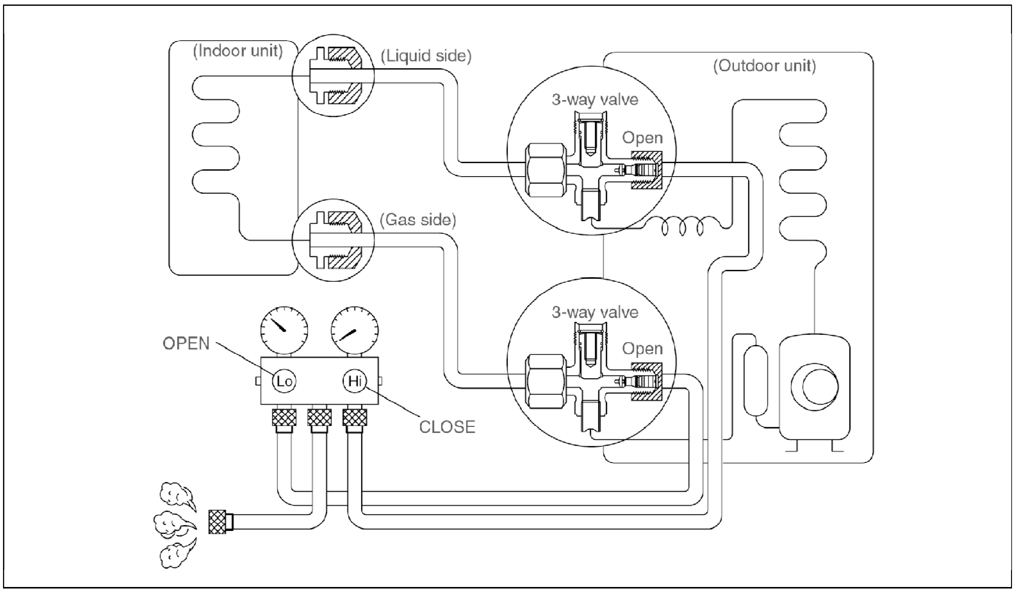
6. Discharge the refrigerant.

    - Close the valve on the gas cylinder and discharge the refrigerant until the gauge indicates 0.1 to 0.3 MPa.

7. Disconnect the manifold gauge and gas cylinder.
8. Mount the valve caps and the service port caps onto the 3-way valves.

    - Be sure to use a torque wrench to tighten the service port nut.
    - Be sure to check for gas leakage.

11.1.4. Balance refrigerant of the 3-way valves


(Indoor unit)
(Liquid side)
(Outdoor unit)
3-way valve
Open
(Gas side)
3-way valve
Open
OPEN
Lo
Hi
CLOSE

Procedure:

1. Confirm that both the 3-way valves are set to the open position.
2. Connect the manifold gauge to the gas side (Low side) 3-way valve’s port.

    - Leave the valve on the manifold gauge closed.
    - Connect the manifold gauge to the service port.

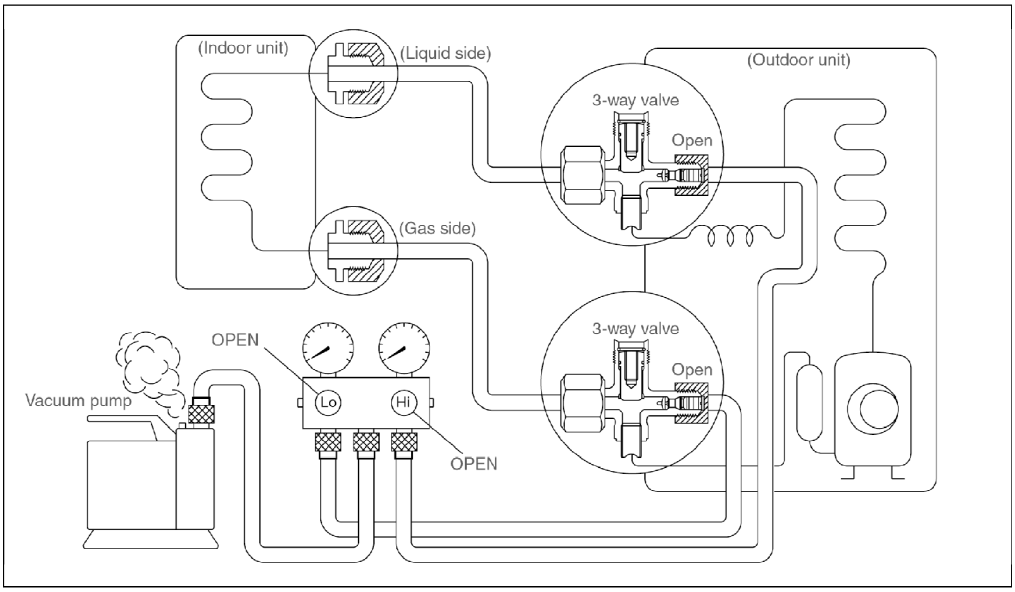
3. Open the valves (Low side) on the manifold gauge and discharge the refrigerant until the gauge indicates 0.1 MPa .

- If there is no air in the refrigeration cycle [the pressure when the air conditioner is not running is higher than 0.1 MPa]. If this is the case, it will not be necessary to apply a evacuation.

- Discharge the refrigerant gradually; if it is discharged too suddenly, the refrigeration oil will also be discharged.

11.1.5. Evacuation

(No refrigerant in the refrigeration cycle)


(Indoor unit)
(Liquid side)
(Outdoor unit)
3-way valve
Open
(Gas side)
3-way valve
Open
OPEN
Vacuum pump
Lo
Hi
OPEN

Procedure:

1. Connect the vacuum pump to the manifold gauge's centre hose.

2. Evacuation for approximately one hour.

- Confirm that the gauge needle has moved toward -0.01 MPa.

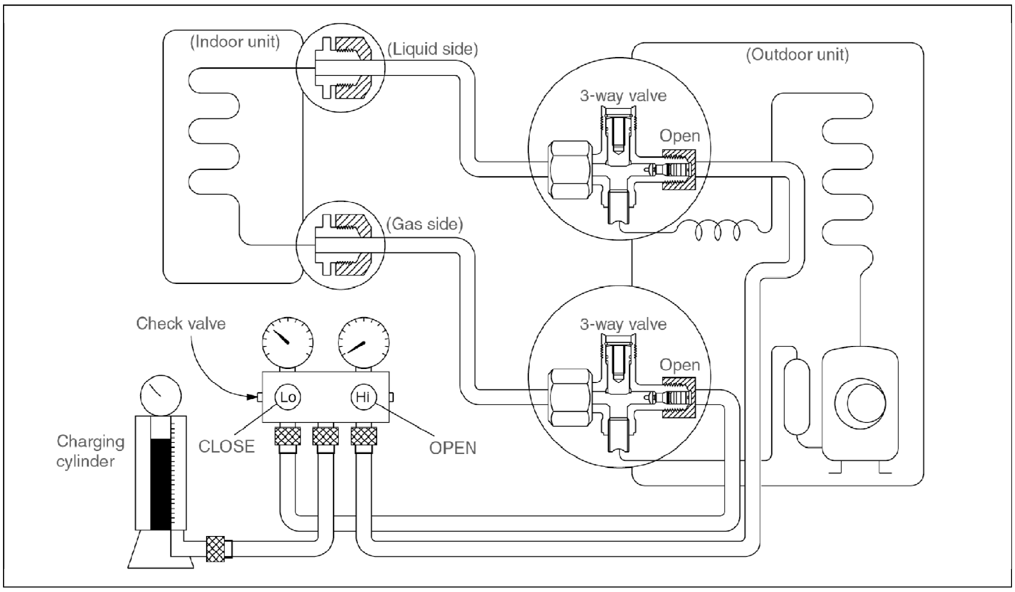
3. Close the valve (Low side) on the manifold gauge, turn off the vacuum pump, and confirm that the gauge needle does not move (approximately 5 minutes after turning off the vacuum pump).

4. Disconnect the manifold gauge from the vacuum pump.

- Vacuum pump oil.
If the vacuum pump oil becomes dirty or depleted, replenish as needed.

11.1.6. Gas charging

(After Evacuation)


(Indoor unit)
(Liquid side)
(Outdoor unit)
3-way valve
Open
(Gas side)
Check valve
3-way valve
Open
Lo
Hi
Charging cylinder
CLOSE
OPEN

Procedure:

1. **Connect the charge hose to the gas charging cylinder.**

    - Connect the charge hose which you disconnected from the vacuum pump to the valve at the bottom of the cylinder.

2. **Purge the air from the charge hose.**

    - Open the valve at the bottom of the cylinder and press the check valve on the charge set to purge the air. (Be careful of the liquid refrigerant). The procedure is the same if using a gas cylinder.

3. **Open the valve (Low side) on the charge set and charge the system with liquid refrigerant.**

    - If the system cannot be charged with the specified amount of refrigerant, it can be charged with a little at a time (approximately 150g each time) while operating the air conditioner in the cooling cycle; however, one time is not sufficient, wait approximately 1 minute and then repeat the

procedure. (pumping down-pin)

4. Immediately disconnect the charge hose from the / 3-way valve's service port.

   - Stopping partway will allow the refrigerant to be discharged.
   - If the system has been charged with liquid refrigerant while operating the air conditioner, turn off the air conditioner before disconnecting the hose.

5. Mount the valve caps and the service port caps.

   - Use a torque wrench to tighten the service port nut.
   - Be sure to check for gas leakage.

12. Servicing Information

Caution:

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 (30 - 40°C) higher. Please use a high temperature soldering iron. In case of the soldering iro temperature control, please set it to 700 ± 20°F (370 ± 10°C).
- Pb free solder will tend to splash when heated too high (about 1100° F/600°C).

12.1. Indoor Electronic Controllers Removal Procedures

1. The Electronic Controller, a Signal Receiver and an Indicator (Fig. 3) can be seen by the below steps:

   - Open the Intake Grille and remove the screw at the front of the Front Grille. (Fig. 1).
   - Remove the 3 caps and 3 screws at the bottom of the Front Grille. (Fig. 1)
   - Remove the Front Grille by releasing the 3 hooks at the top of the Front Grille. (Fig. 1)
   - Unhook the tabs at the Control Board to remove the Control Board Cover. (Fig. 2)

2. To remove the Electronic Controllers:

   - Release the 2 Particular Piece. (Fig. 3)
   - Release the CN-REC/DISP connectors. (Fig. 4)
   - Release the CN-TH connector. (Fig. 4)
   - Release the CN-MAIN connector. (Fig. 4)

- **Release the CN-001 connector. (Fig. 4)**
- **Release the CN-002 connector. (Fig. 4)**
- **Release the CN-STM1 connector. (Fig. 4)**
- **Release the CN-STM2 connector. (Fig. 4)**
- **Release the hooks that hold the Electronic Controller. (Fig. 3)**

Fig. 1

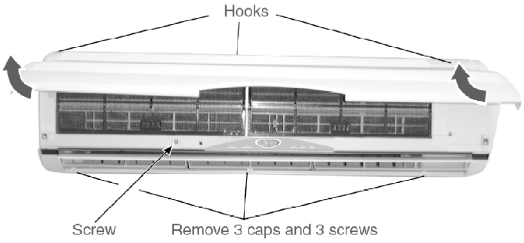

Hooks
Screw
Remove 3 caps and 3 screws

Fig. 2

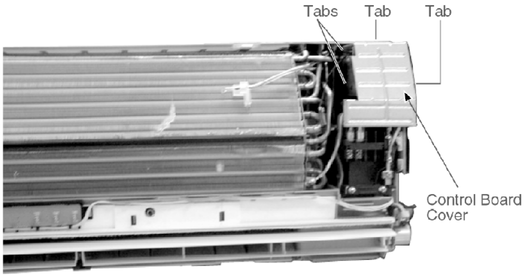

Tabs
Tab
Tab
Control Board
Cover

Fig. 3

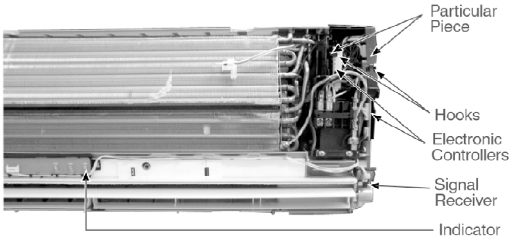
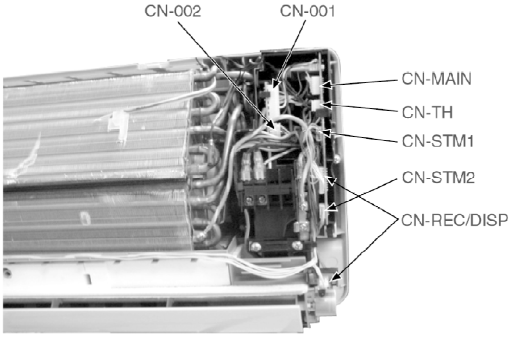

Particular
Piece
Hooks
Electronic
Controllers
Signal
Receiver
Indicator

Fig. 4


CN-002
CN-001
CN-MAIN
CN-TH
CN-STM1
CN-STM2
CN-REC/DISP

12.2. Cross Flow Fan and Indoor Fan Motor Removal Procedures

1. In order to remove the Cross Flow Fan and Indoor Fan Motor, Control Board need to be taken out by releasing all the

connectors as indicated below.

A. Release the Earth Wire screw. (Fig. 5)
B. Release the Intake Air Sensor. (Fig. 5)
C. Release the Piping Sensor. (Fig. 5)
D. Release the CN-REC/DISP connectors. (Fig. 5)
E. Release the CN-STM1 connector. (Fig. 5)

2. **Pull out the Drain Hose from outlet to remove the Discharge Grille. (Fig. 6)**
3. **Removing the right and left screws. (Fig. 7)**
4. **By pressing down the hook at the left and pushing up the hook at the right, you will be able to remove the Control Board. (Fig. 7)**
5. **Remove the screw at the Cross Flow Fan. (Fig. 8)**

Fig. 5

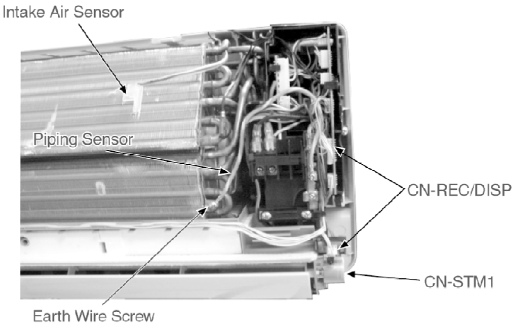

Intake Air Sensor
Piping Sensor
CN-REC/DISP
CN-STM1
Earth Wire Screw

Fig. 6

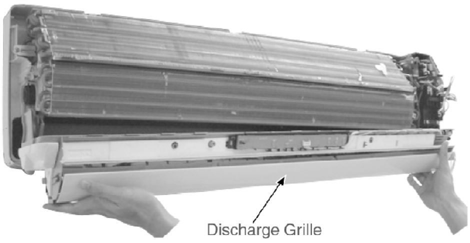

Discharge Grille

Fig. 7

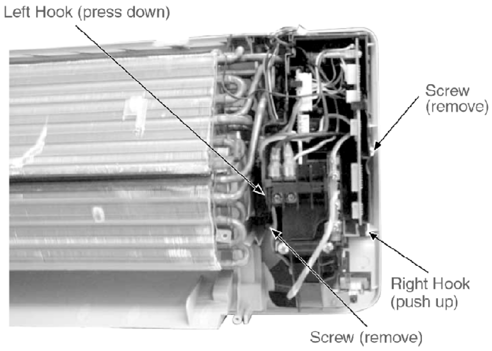
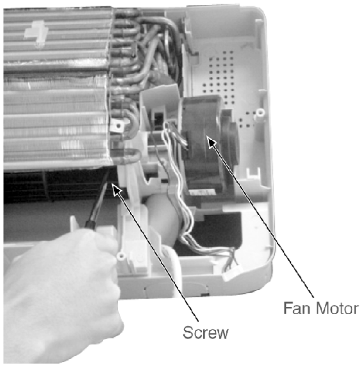

Left Hook (press down)
Screw (remove)
Right Hook (push up)
Screw (remove)

Fig. 8


Fan Motor
Screw

6. **Remove the Bearing. (Fig. 9)**

7. **Remove the screws at the left of the Evaporator. (Fig. 9)**

8. **Push up the Evaporator and pull out the Cross Flow Fan from shaft. By then, Fan Motor can be taken out. (Fig. 10).**
   REMINDER - To reinstall the Fan Motor, put it back in place, adjust the position of the Fan Motor's leadwire appropriately as shown in the Fig. 8 before installing the Cross Flow Fan.

Fig. 9

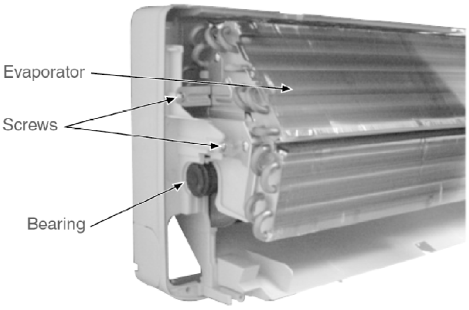
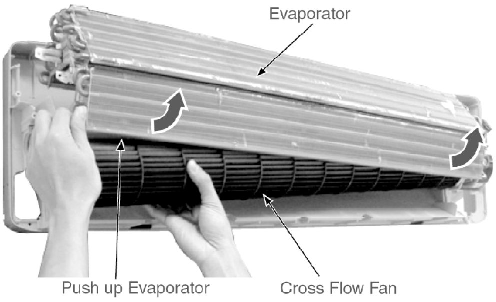

Evaporator
Screws
Bearing

Fig. 10


Evaporator
Push up Evaporator
Cross Flow Fan

- Remote Control Reset

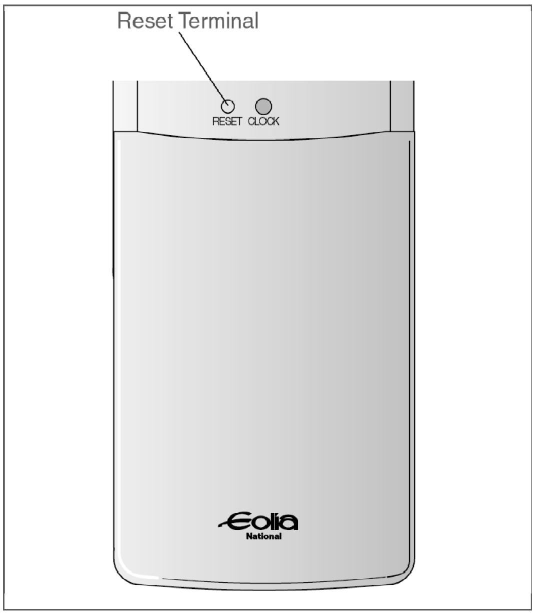
When the batteries are inserted for the first time, or the batteries are replaced, all the indications will blink and the remote control might not work.

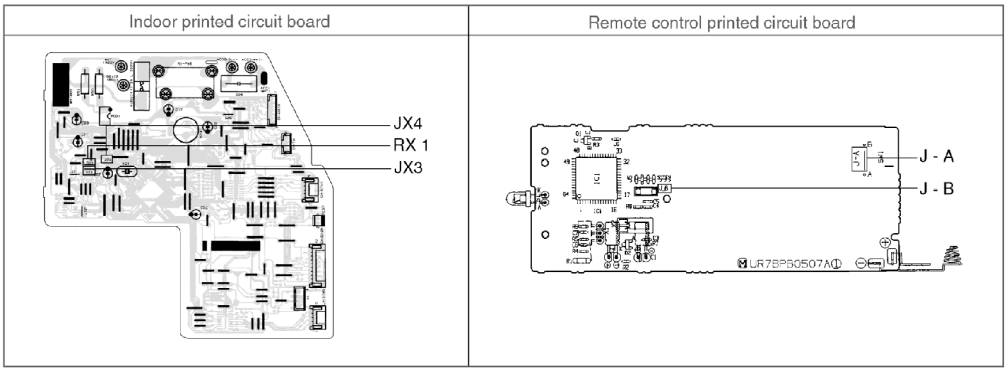
If this happen, remove the cover of the remote control and you will

find a resetting terminal, and by shorting it with a minus screwdriver, it will return to normal.

- Changing the wireless remote control transmission code

When two indoor units are installed in the same room, in order to prevent operating errors caused by using two remote controls, cut a jumper wire at the remote control printed circuit board (J - A) and cut a jumper wire at the indoor printed circuit board (JX4). It is possible to select from 4 types of transmission codes including one at time of delivery condition (0).


Reset Terminal
RESET
CLOCK
Eolia
National


Indoor printed circuit board
Remote control printed circuit board
JX4
RX 1
JX3
J - A
J - B

	Remote control printed circuit board		Indoor printed circuit board			Note
	J - A	J - B	JX3	JX4	RX 1	
0	SHORT	OPEN	SHORT	SHORT	——	At product delivery
1	OPEN	OPEN	SHORT	OPEN	——	
2	SHORT	SHORT	OPEN	OPEN	10 KΩ	
3	OPEN	SHORT	SHORT	OPEN	10 KΩ	

13. Troubleshooting Guide

13.1. Refrigeration cycle system

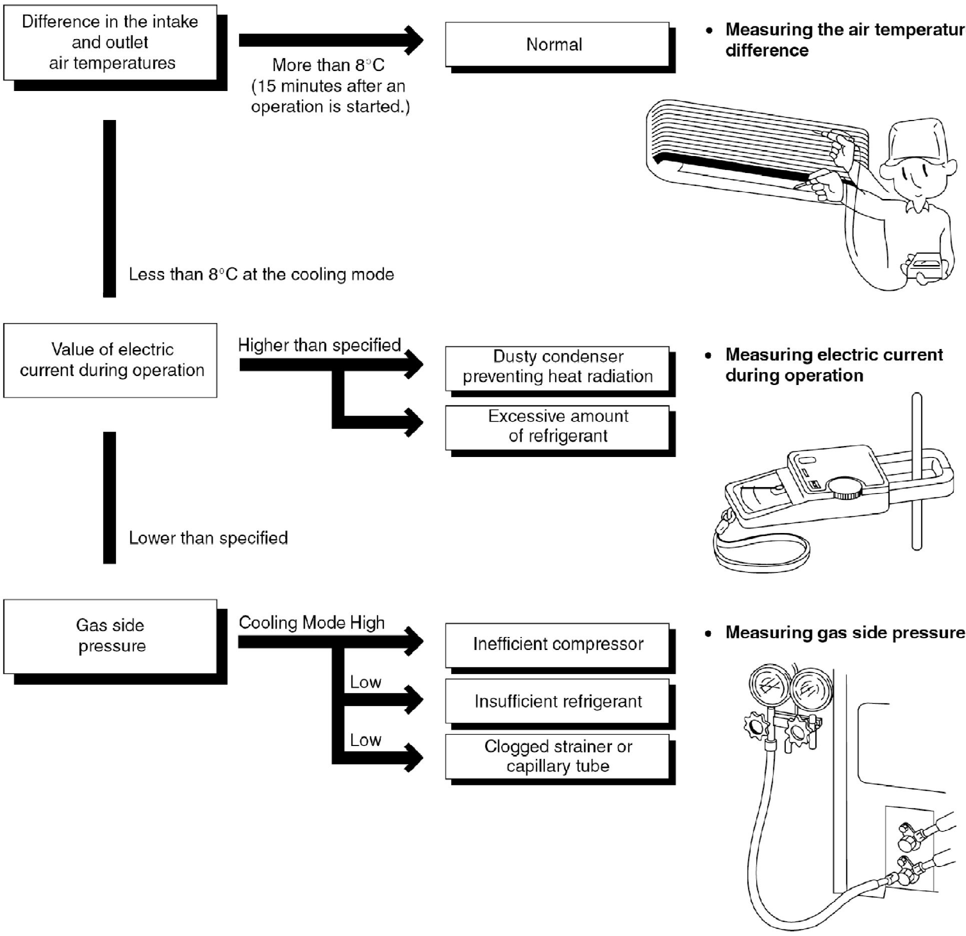
In order to diagnose malfunctions, make sure that there are no electrical problems before inspecting the refrigeration cycle. Such problems include insufficient insulation, problem with the power source, malfunction of a compressor and a fan.

The normal outlet air temperature and pressure of the refrigeration cycle depends on various conditions, the standard values for them are shown in the table on the right.

Normal Pressure and Outlet Air Temperature (Standard)

	Gas pressure Mpa (kg/cm²G)	Outlet air temperature (°C)
Cooling Mode	0.4 ~ 0.6 (4 ~ 6)	12 ~ 16

* Condition: Indoor fan speed; High
Outdoor temperature: 35°C


Difference in the intake and outlet air temperatures
More than 8°C (15 minutes after an operation is started.)
Normal
• Measuring the air temperature difference
Less than 8°C at the cooling mode
Value of electric current during operation
Higher than specified
Dusty condenser preventing heat radiation
Excessive amount of refrigerant
• Measuring electric current during operation
Lower than specified
Gas side pressure
Cooling Mode High
Inefficient compressor
Low
Insufficient refrigerant
Low
Clogged strainer or capillary tube
• Measuring gas side pressure

13.1.1. Relationship between the condition of the air conditioner and pressure and electric current

Condition of the air conditoner	Cooling Mode		
	Low Pressure	High Pressure	Electric current operatio
Insufficient refrigerant (gas leakage)	↘	↘	↘
Clogged capillary tube or Strainer	↘	↘	↘
Short circuit in the indoor unit	↘	↘	↘
Heat radiation deficiency of the outdoor unit	↗	↗	↗
Inefficient compression	↗	↘	↘

- Carry out the measurements of pressure, electric current, and temperature fifteen minutes after an operation is started.

13.1.2. Diagnosis methods of a malfunction of a compressor

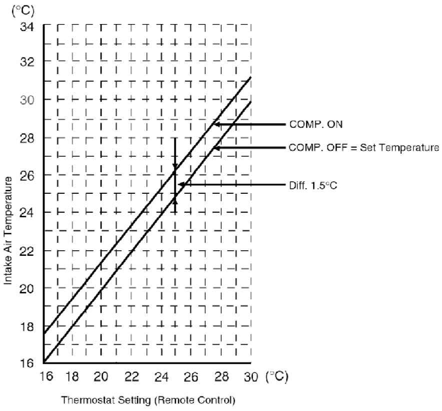
Nature of fault	Symptom
Insufficient compressing of a compressor	-Electric current during operation becomes approximately 20% lower than the normal va -The discharge tube of the compressor becomes abnormally hot (normally 70 to 90°C). -The difference between high pressure and low pressure becomes almost zero.
Locked compressor	-Electric current reaches a high level abnormally, and the value exceeds the limit of an a some cases, a breaker turns off. -The compressor has a humming sound.

14. Technical Data

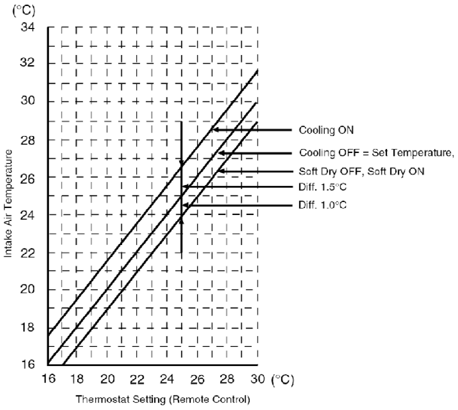
■ Thermostat characteristics

CS-E1819K / CS-E2419K

- **Cooling**



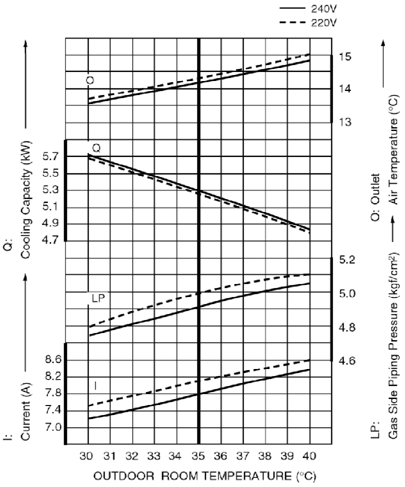
- **Soft Dry**



■ Operation characteristics

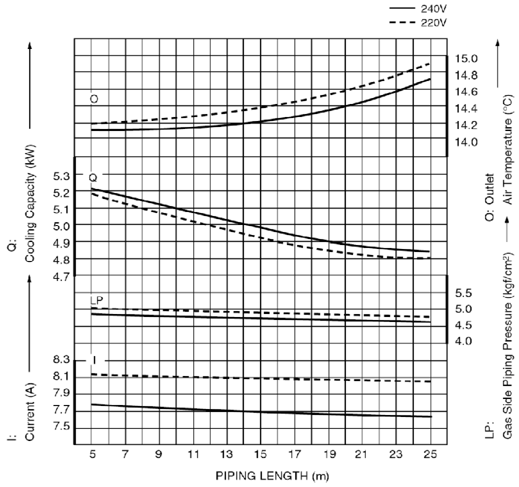
CS-E1819K / CU-E1819K

- **Cooling Characteristic**



[Condition] Room temperature: 27/19°C
Cooling operation: At High fan
Piping length: 5 m

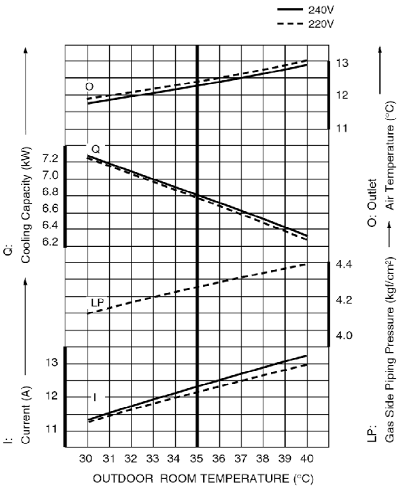
- **Piping Length Characteristic**



[Condition] Room temperature: 27/19°C
Outdoor temperature: 35/24°C
Cooling opeartion: At High fan

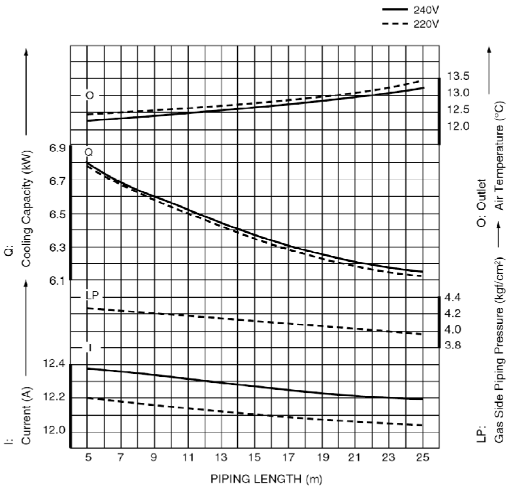
CS-E2419K / CU-E2419K

- **Cooling Characteristic**



[Condition] Room temperature: 27/19°C
Cooling operation: At High fan
Piping length: 5 m

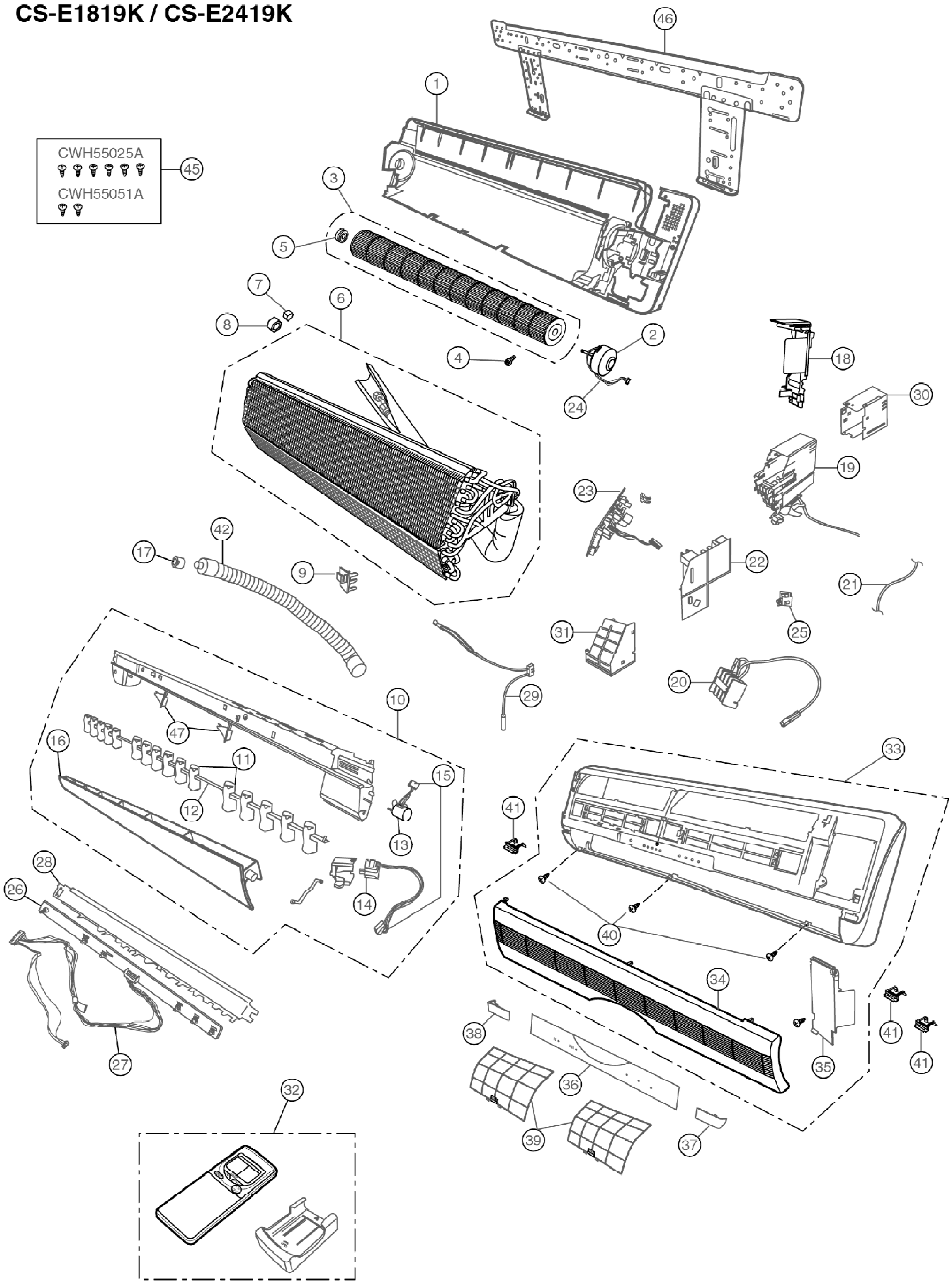
- **Piping Length Characteristic**



[Condition] Room temperature: 27/19°C
Outdoor temperature: 35/24°C
Cooling opeartion: At High fan

15. Exploded View

CS-E1819K / CS-E2419K


46
1
CWH55025A
CWH55051A
45
3
5
7
8
6
4
2
24
18
30
19
23
22
21
25
42
17
9
31
20
29
10
47
16
11
12
15
13
14
33
41
40
28
26
27
34
38
36
35
41
41
39
37
32

Note:
The above exploded view is for the purpose of parts disassembly and replacement.
The non-numbered parts are not kept as standard service parts.

16. Replacement Parts List

<Model: CS-E1819K / CS-E2419K>

REF. NO.	PART NAME & DESCRIPTION	QTY.	CS-E1819K	CS-E2419K
1	CHASSY COMPLETE	1	CWD50C1178	←
2	FAN MOTOR	1	CWA981056	←
3	CROSS FLOW FAN COMPLETE	1	CWH02C1010	←
4	SCREW - CROSS FLOW FAN	1	CWH4580304	←
5	BEARING ASS'Y	1	CWH64K007	←
6	EVAPORATOR	1	CWB30C1210	CWB30C1211
7	FLARE NUT	1	CWH6002140 (1/4")	←
8	FLARE NUT	1	CWT25007 (1/2")	CWT25004 (5/8
9	INTAKE AIR SENSOR HOLDER	1	CWH32142	←
10	DISCHARGE GRILLE COMPLETE	1	CWE20C2102	←
11	VERTICAL VANE	16	CWE241088	←
12	CONNECTING BAR	1	CWE261025	←
13	AIR SWING MOTOR	1	CWA98260	←
14	AIR SWING MOTOR	1	CWA981041	←
15	LEAD WIRE - AIR SWING MOTOR	1	CWA67C3731	←
16	HORIZONTAL VANE	1	CWE241072	←
17	CAP - DRAIN TRAY	1	CWH52C1001	←
18	PARTICULAR PIECE	1	CWD932162	←
19	CONTROL BOARD	1	CWH102103	←
20	TERMINAL BOARD COMPLETE	1	CWA28C2093	CWA28C2094
21	POWER SUPPLY CORD	1	CWA20C2163	CWA20C2164
22	ELECTRONIC CONTROLLER - MAIN	1	CWA742662	CWA742497
23	ELECTRONIC CONTROLLER - POWER	1	CWA742616	←
24	LEAD WIRE - FAN MOTOR	1	-	-
25	P.C.B. RECEIVER	1	CWA73C1124	←
26	ELECTRONIC CONTROLLER - INDICATOR	1	CWE39C1046	←
27	LEAD WIRE - INDICATOR	1	CWA67C3724	←
28	INDICATOR HOLDER	1	CWD932163	←
29	SENSOR COMPLETE	1	CWA50C608	←
30	CONTROL BOARD TOP COVER	1	CWH131091	←
31	CONTROL BOARD FRONT COVER	1	CWH131090	←
32	REMOTE CONTROL COMPLETE	1	CWA75C2197	←
33	FRONT GRILLE COMPLETE	1	CWE11C2330	←
34	INTAKE GRILLE	1	CWE221037	←
35	GRILLE DOOR	1	CWE141033	←
36	CONTROL PANEL	1	CWE30C1008	←
37	DECORATION BASE (R)	1	CWE351067	←
38	DECORATION BASE (L)	1	CWE351068	←
39	AIR FILTER	2	CWD001049	←
40	SCREW - FRONT GRILLE	3	XTT4+16C	←
41	CAP - FRONT GRILLE	3	CWH521062	←
42	DRAIN HOSE	1	CWH851044	←
45	BAG COMPLETE - INSTALLATION SCREW	1	CWH82C067	←
46	INSTALLATION PLATE	1	CWH36K1007	←
47	FULCRUM	2	CWH621013	←

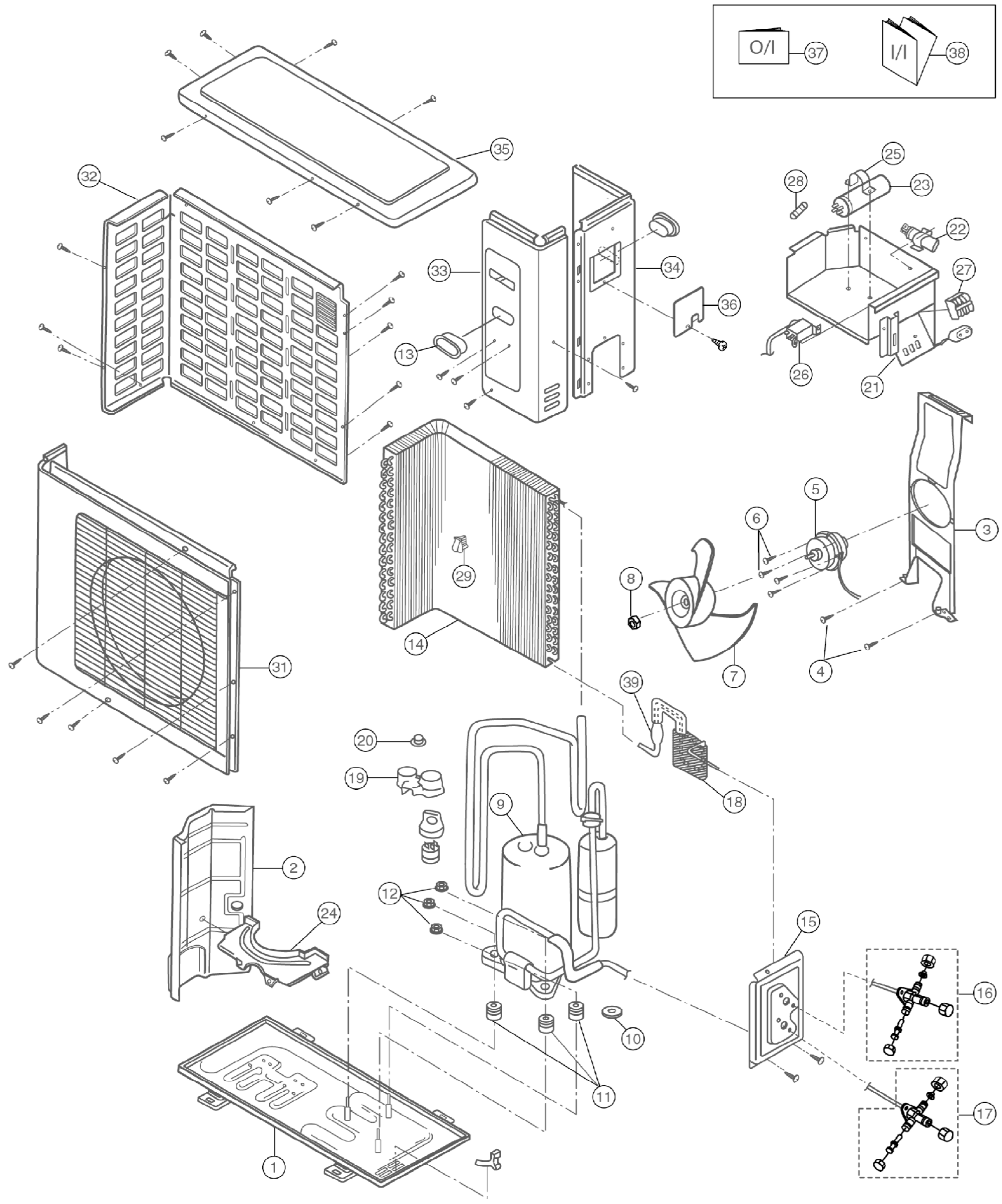
(Note)

- All parts are supplied from MAICO, Malaysia (Vendor Code: 061).

- “O” marked parts are recommended to be kept in stock.

17. Exploded View

CU-E1819K / CU-E2419K


O/I
37
I/I
38
35
32
25
28
23
22
33
34
27
36
13
26
21
5
6
3
29
8
14
7
4
31
39
20
19
18
9
2
12
24
15
16
10
11
17
1

Note:
The above exploded view is for the purpose of parts disassembly and replacement.
The non-numbered parts are not kept as standard service parts.

18. Replacement Parts List

<Model: CU-E1819K / CU-E2419K>

REF. NO.	PART NAME & DESCRIPTION	QTY.	CU-E1819K	CU-E2419K	REMARKS
1	CHASSY ASS’Y	1	CWD50K514B	←	
2	SOUND PROOF BOARD	1	CWH15223	←	
3	FAN MOTOR BRACKET	1	CWD541049	←	
4	SCREW - FAN MOTOR BRACKET	4	CWH55027	←	
5	FAN MOTOR	1	CWA921188	CWA921189	0
6	SCREW - FAN MOTOR MOUNT	3	CWH55252	←	
7	PROPELLER FAN ASS’Y	1	CWH00K087	CWH00K1001	
8	NUT - PROPELLER FAN	1	CWH56053	CWH56060	
9	COMPRESSOR	1	2JS318D3CB02	2JS438D3GA02	0
10	PACKING	1	CWB81047	←	
11	ANTI - VIBRATION BUSHING	3	CWH50055	←	
12	NUT - COMPRESSOR MOUNT	3	CWH4582065	←	
13	HANDLE	2	CWE16000E	←	
14	CONDENSER	1	CWB32C1283	CWB32C1309	
15	HOLDER COUPLING ASS’Y	1	CWH35K029B	CWH35K030B	
16	3-WAY VALVE (LIQUID)	1	CWB01464	←	0
17	3-WAY VALVE (GAS)	1	CWB01364	CWB01430	0
18	TUBE ASS’Y (CAPILLARY TUBE & STRAINER)	1	CWT022928	CWT022929	
19	TERMINAL COVER	1	CWH171012	←	
20	NUT - TERMINAL COVER	1	CWH7080300	←	
21	CONTROL BOARD	1	CWH10K1019	←	
22	CAPACITOR - FAN MOTOR	1	DS441355BPQE	←	0
23	CAPACITOR - COMPRESSOR	1	DS371456CPNA	←	0
24	PARTICULATE PLATE	1	CWD90830	←	
25	HOLDER CAPACITOR	1	CWH30060	←	
26	THERMOSTAT	1	CWA15129	←	
27	TERMINAL BOARD ASS’Y	1	CWA28K1020	←	
28	FUSE	1	-	←	
29	HOLDER - SENSOR	1	-	←	
31	CABINET FRONT PLATE	1	CWE06K034B	←	
32	CABINET REAR PLATE	1	CWE02096B	←	
33	CABINET FRONT PLATE	1	CWE06075B	←	
34	CABINET SIDE PLATE	1	CWE04111B	←	
35	CABINET TOP PLATE	1	CWE03101B	←	
36	CONTROL BOARD COVER	1	CWH13331A	←	
37	OPERATION INSTRUCTIONS	1	CWF563968	←	
38	INSTALLATION INSTRUCTIONS	1	CWF612360	←	
39	TUBE ASS’Y (RECEIVER)	1	CWT01C2437	←	

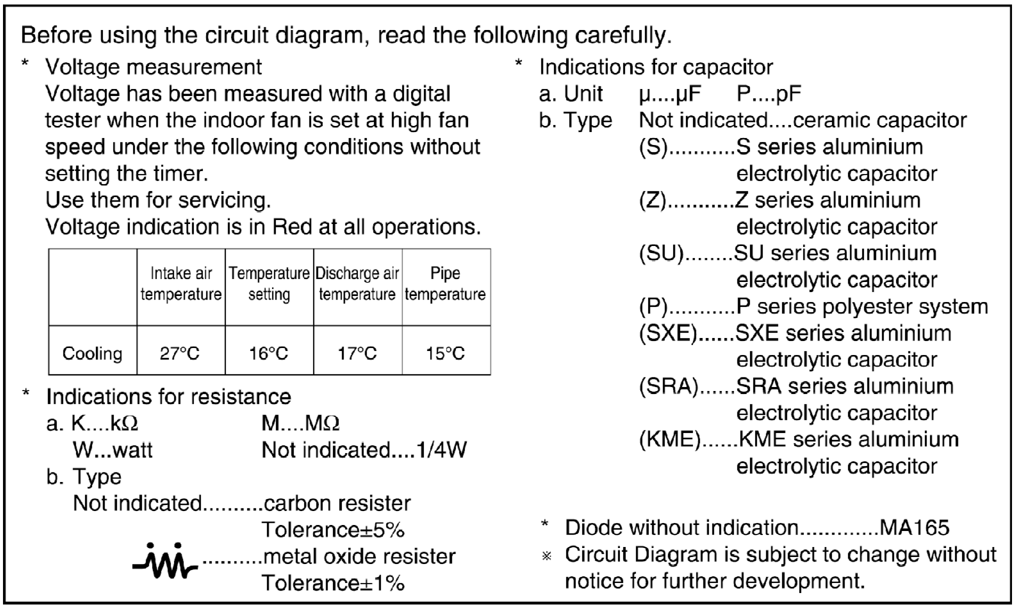
(Note)

- All parts are supplied from MAICO, Malaysia (Vendor Code: 061).

- “O” marked parts are recommended to be kept in stock.

19. Electronic Circuit Diagram

How to use electronic circuit diagram



Before using the circuit diagram, read the following carefully.

* Voltage measurement
Voltage has been measured with a digital tester when the indoor fan is set at high fan speed under the following conditions without setting the timer.
Use them for servicing.
Voltage indication is in Red at all operations.

	Intake air temperature	Temperature setting	Discharge air temperature	Pipe temperature
Cooling	27°C	16°C	17°C	15°C

* Indications for resistance
a. K....kΩ M....MΩ
W...watt Not indicated....1/4W
b. Type
Not indicated..........carbon resister
Tolerance±5%
..........metal oxide resister
Tolerance±1%

* Indications for capacitor
a. Unit μ....μF P....pF
b. Type Not indicated....ceramic capacitor
(S)...........S series aluminium electrolytic capacitor
(Z)...........Z series aluminium electrolytic capacitor
(SU)........SU series aluminium electrolytic capacitor
(P)...........P series polyester system
(SXE)......SXE series aluminium electrolytic capacitor
(SRA)......SRA series aluminium electrolytic capacitor
(KME)......KME series aluminium electrolytic capacitor

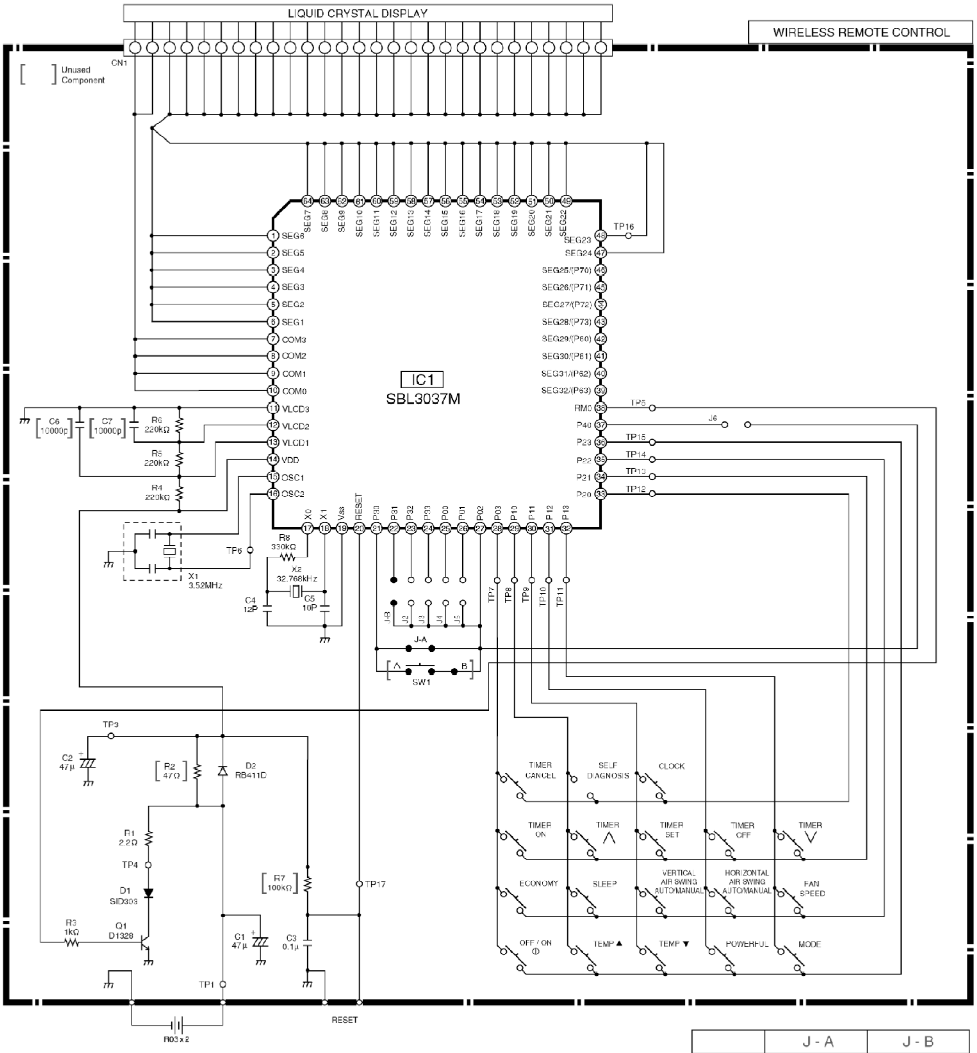
* Diode without indication.............MA165
※ Circuit Diagram is subject to change without notice for further development.

TIMER TABLE

Name		Time	Test Mode (When test point Short-circuited)	Remarks
Sleep Mode Waiting		**1 hr.**	**6 sec.**	
Sleep Mode Operation		**8 hrs.**	**48 sec.**	
Real Timer		**1 hr.**	**1 min.**	
		10 min.	**10 sec.**	
		1 min.	**1 sec.**	
Time Delay Safety Control		**2 min. 58 sec.**	**0 sec.**	
Forced Operation		**60 sec.**	**0 sec.**	
Time Save Control		**7 min.**	**42 sec.**	
Anti-Freezing		**4 min.**	**0 sec.**	
Auto Mode Judgement		**20 sec.**	**0 sec.**	
Soft Dry	**OFF**	**6 min.**	**36 sec.**	
	ON	**10 min.**	**60 sec.**	**Soft Dry: 10 min. operation**
Deodorizing Control	**Cooling**	**40 sec.**	**4 sec.**	
		70 sec.	**7 sec.**	
		20 sec.	**2 sec.**	
		180 sec.	**18 sec.**	
	Soft Dry	**40 sec.**	**4 sec.**	
		360 sec.	**36 sec.**	

Comp. Reverse Rotation Detection	**5 min.**	**30 sec.**	**Comp. ON 5 min. and above**
	2 min.	**0 sec.**	
Comp./ Fan Motor Delay Timer	**1.6 sec.**	**0 sec.**	
Powerful Mode Operation	**15 min.**	**15 sec.**	
Random Auto Restart Control	**0 ~ 62 sec.**	**0 ~ 6.2 sec.**	

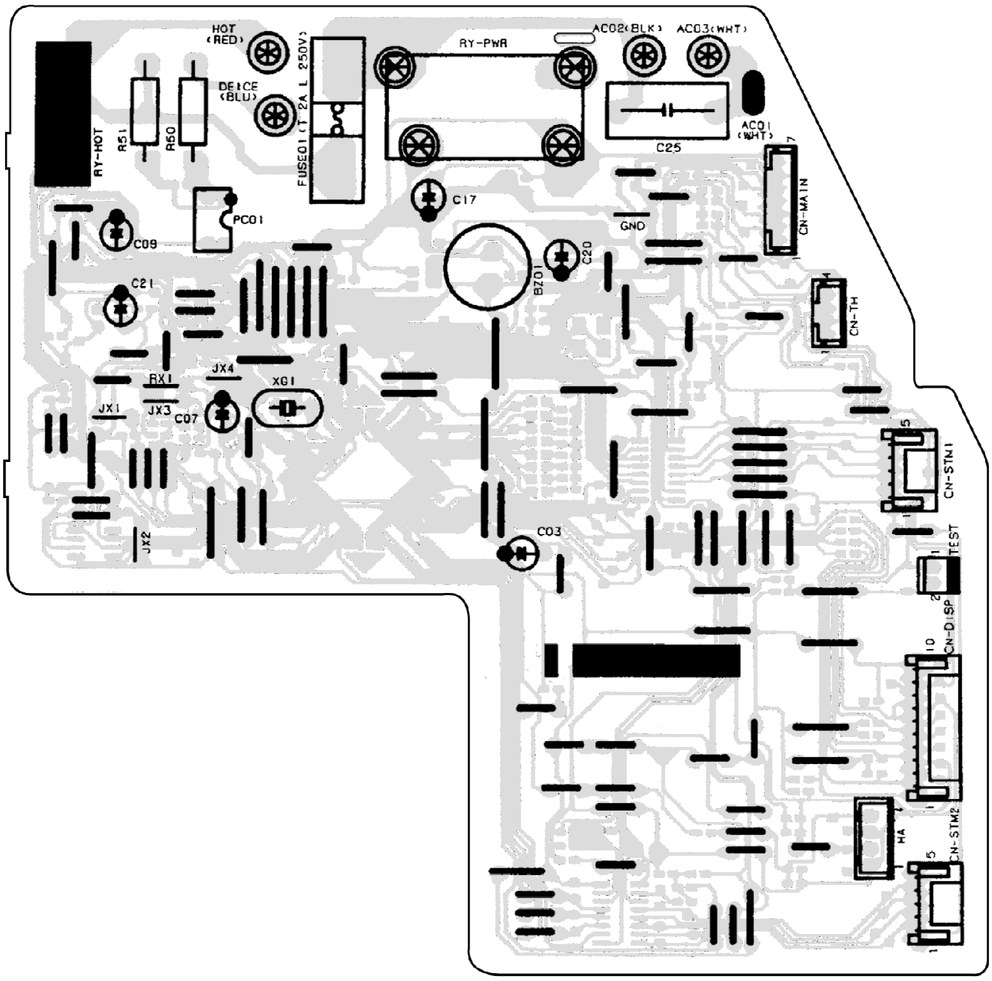
19.1. REMOTE CONTROL / /



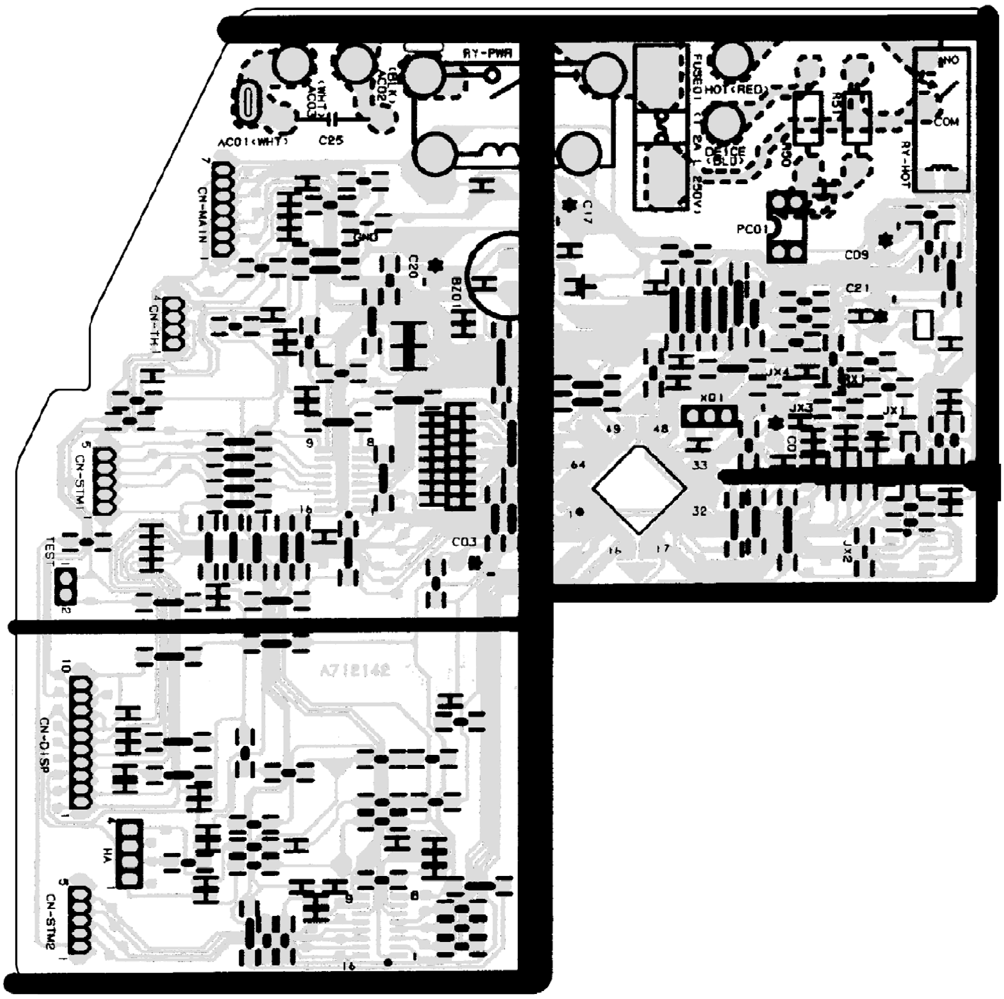
LIQUID CRYSTAL DISPLAY
WIRELESS REMOTE CONTROL
[ ] Unused Component
CN1
IC1
SBL3037M
TP16
SEG6
SEG5
SEG4
SEG3
SEG2
SEG1
COM3
COM2
COM1
COM0
VLCD3
VLCD2
VLCD1
VDD
OSC1
OSC2
SEG23
SEG24
SEG25/(P70)
SEG26/(P71)
SEG27/(P72)
SEG28/(P73)
SEG29/(P60)
SEG30/(P61)
SEG31/(P62)
SEG32/(P63)
RMO
P40
P23
P22
P21
P20
TP5
J6
TP15
TP14
TP13
TP12
C6 10000p
C7 1000p
R6 220kΩ
R5 220kΩ
R4 220kΩ
TP6
X1 3.52MHz
R8 330kΩ
X2 32.768kHz
C4 12P
C5 10P
RESET
J-A
J-B
SW1
TP7
TP8
TP9
TP10
TP11
TP3
C2 47μ
R2 47Ω
D2 RB411D
R1 2.2Ω
TP4
D1 SID303
R3 1kΩ
Q1 D1328
R7 100kΩ
TP17
C1 47μ
C3 0.1μ
TP1
R03 x 2
TIMER CANCEL
SELF DIAGNOSIS
CLOCK
TIMER ON
TIMER ∧
TIMER SET
TIMER OFF
TIMER ∨
ECONOMY
SLEEP
VERTICAL AIR SWING AUTO/MANUAL
HORIZONTAL AIR SWING AUTO/MANUAL
FAN SPEED
OFF / ON
TEMP ▲
TEMP ▼
POWERFUL
MODE

	J - A	J - B
0	SHORT	OPEN
1	OPEN	OPEN
2	SHORT	SHORT
3	OPEN	SHORT

19.2. PRINT PATTERN / INDOOR UNIT PRINTED CIRCUIT BOARD / / / TOP VIEW

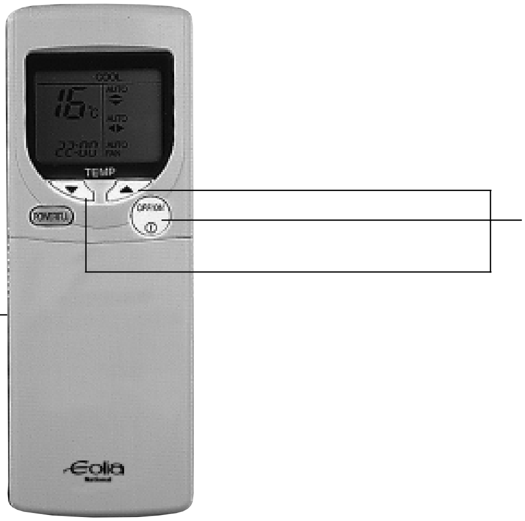

HOT
(RED)
DEICE
(BLU)
FUSE01 (T 2A L 250V)
RY-PWR
AC02(BLK)
AC03(WHT)
AC01
(WHT)
C25
RY-HOT
R51
R50
PC01
C09
C17
GND
CN-MAIN
7
1
C20
BZ01
C21
CN-TH
4
1
JX4
XG1
RX1
JX1
JX3
C07
5
1
CN-STN1
C03
JX2
TEST
2
1
CN-DISP
10
1
HA
5
1
CN-STM2

19.3. PRINT PATTERN / INDOOR UNIT PRINTED CIRCUIT BOARD / / / BOTTOM VIEW


RY-PWR
(WHT)
AC03
(BLK)
AC02
AC01(WHT)
C25
7
CN-MAIN
1
GND
C20
BZ01
4
CN-TH
1
5
CN-STM1
1
9
8
16
C03
TEST
2
10
CN-DISP
1
A712142
HA
5
CN-STM2
1
9
8
16
FUSE01
T 2A L 250V
HOT(RED)
DEICE
(BLU)
R50
R51
NO
COM
RY-HOT
C17
PC01
CD9
C21
JX4
RX1
X01
JX3
JX1
CD1
49
48
64
33
1
32
16
17
JX2

[MAICO] Printed in Malaysia /

Remote Control



OFF / ON ⏻

Operation OFF / ON

MODE

Operation Mode Selection

• AUTO	Automatic Operation Mode
• COOL	Cooling Operation Mode
• DRY	Soft Dry Operation Mode
• FAN	Air Circulation Mode

FAN SPEED

Indoor Fan Speed Selection

• FAN ■	Low Fan Speed
• FAN ■■■	Medium Fan Speed
• FAN ■■■■■	High Fan Speed
• AUTO FAN	Automatic Fan Speed

AIR SWING

Vertical Airflow Direction Control

• ⬍	Vertical Automatic Airflow Direction Control and Manual Airflow Direction Control (5 stages of adjustment).
• ◀▶	Horizontal Automatic Airflow Direction Control and Manual Airflow Direction Control (5 stages of adjustment).

POWERFUL

Powerful Mode Operation OFF/ON

ECONOMY

Economy Mode Operation OFF/ON

TEMP.

Room Temperature Setting

Cooling, Soft Dry, Air Circulation Operation.

- Temperature Setting (16°C to 30°C)

Automatic Operation

• Hi	Operation with 2°C higher than standard temperature.
•	Operation with standard temperature.
• Lo	Operation with 2°C lower than standard temperature.

ON-TIMER
OFF-TIMER

Timer Operation Selection

- 24-hour, OFF / ON Real Timer Setting.

TIME

Time / Timer Setting

- Hours and minutes setting.

SET
CANCEL

Timer Operation Set / Cancel

- ON Timer and OFF Timer setting and cancellation.

CLOCK

Clock Setting

- Current time setting.

SLEEP

Sleep Mode Operation OFF / ON

Indoor Unit

AUTO
OFF / ON

Automatic Operation Button

- Press for < 5s to operate Automatic operation mode.
  (Used when the remote control cannot be used.)
- Press continuously for 5s or < 10s to operate Test Run/Pump down. "Beep" sound will be heard at the 5th second. (Used when test running or servicing.)
- Press continuously for 10s and above to omit or resume the remote control signal receiving sound. "Beep, beep" sound will be heard at the 10th second.

Operation Indication Lamps (LED)

- POWER (Green) .... Lights up in operation, blinks in Automatic Operation Mode judging.
- SLEEP (Orange) .... Lights up in Sleep Mode Operation.
- TIMER (Orange) .... Lights up in Timer Setting.
- POWERFUL (Orange) .. Lights up in Powerful Mode Operation.
- ECONOMY (Green) ..... Lights up in Economy Mode Operation.

Operation Mode

- Cooling, Soft Dry, Air Circulation and Automatic Mode.

Powerful Operation

- Reaches the desired room temperature quickly.

Economy Operation

- To reduce electrical power consumption.

Random Auto Restart Control

- Operation is restarted randomly after power failure at previous setting mode.

Anti-Freezing Control

- Anti-Freezing control for indoor heat exchanger. (Cooling and Soft Dry)

Sleep Mode Auto Control

- Indoor Fan operates at Low speed.
- Operation stops after 8 hours.

Indoor Fan Speed Control

- High, Medium and Low.
- Automatic Fan Speed Mode
  - Cooling: Fan rotates at Hi, Me and SLo speed.
  - Soft Dry: Fan rotates at Lo- speed.

Airflow Direction Control

- Automatic air swing and manual adjusted by remote control for vertical and horizontal airflow.

Time Delay Safety Control

- Restarting is inhibited for appro. 3 minutes.

7 Minutes Time Save Control

- Cooling Operation only.

Anti-Dew Formation Control

- Anti-Dew Formation Control for indoor unit discharge area.

Outdoor Unit

Eolia
National

Compressor Reverse Rotation Protection Control

- To protect compressor from reverse rotation when there is a instantaneous power failure.

Overload Protector

- Inner protector.

60 Secs. Forced Operation Control

- Once the compressor is activated, it does not stop within the first 60 secs. However, it stops immediately with remote control stop signal.

Outdoor Fan Operation Control

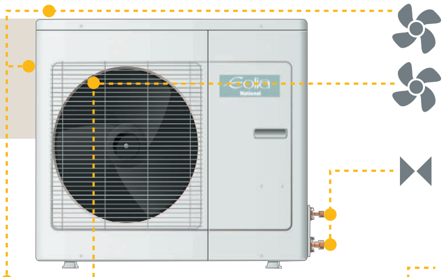
- 4-pole induction motor (2 speed).
- For Cooling or Soft Dry operation
  Hi-speed .... When outdoor temperature reaches to 31°C.
  Lo-speed .... When outdoor temperature reaches to 29°C.

1 PRODUCT OVERVIEW

Your device can...

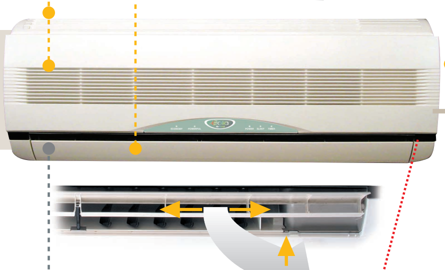
- **COOL** *Cooling*
- **DRY** *Dehumidifying*
- **FAN** *Air circulation*

1.1 Outdoor Unit

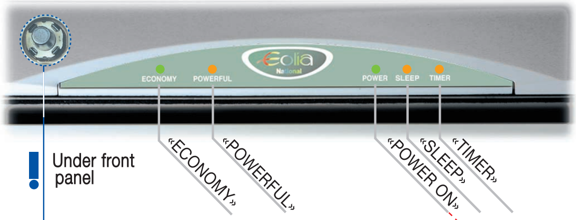

Air intake
Air outlet
Piping

1.2 Indoor Unit

Filters under front panel, see page 27


Direction louver

Indicator & Auto operation button


ECONOMY
POWERFUL
POWER
SLEEP
TIMER
«ECONOMY»
«POWERFUL»
«POWER ON»
«SLEEP»
«TIMER»

Under front panel

Fluorescent lights may interfere with signal transmission

0 - 10 m

1.3 Remote Control

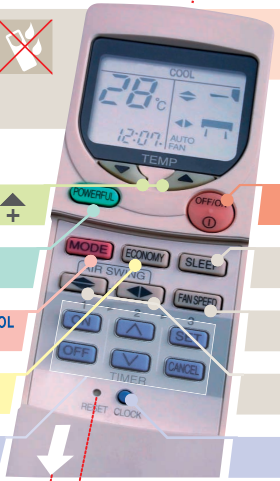
If Remote Control malfunctions/ is misplaced...

1 Open front panel

2 Press to START >>

i AUTO-Mode only

3 Press again to STOP >>


COOL
28°C
12:00
AUTO FAN
TEMP
POWERFUL
OFF/ON
MODE
ECONOMY
SLEEP
AIR SWING
FAN SPEED
ON
OFF
SET
CANCEL
TIMER
RESET
CLOCK

see page			*see page*
25	Set TEMPERATURE - +	Switch OFF/ON of the device	
26	Very fast cooling	Comfortable sleep temperature	26
25	Select MODE AUTO • COOL DRY • FAN	Select Fan speed	26
26	Save electricity	Select air flow direction	26
26	TIMER functions	Set CLOCK	28

Open

Memory reset!

Find on page
28 PREPARATIONS
29 TROUBLE-SHOOTING
30 SAFETY PRECAUTIONS
27 HELPFUL INFORMATION

OPERATION

▨ Press button

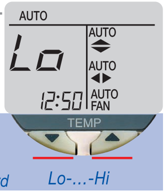
START

Switch on OFF/ON

AUTO

Automatic

Select... MODE

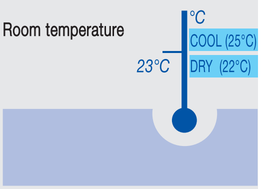

AUTO
Lo
AUTO
AUTO
12:50
AUTO FAN
TEMP

Hi = +2°C
Lo = -2°C
= standard
Lo-...-Hi

According to the room temperature the system automatically chooses

COOL	25°C
DRY	22°C

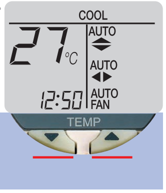
Automatic Internal Function


Room temperature
°C
COOL (25°C)
DRY (22°C)
23°C

COOL

Cooling

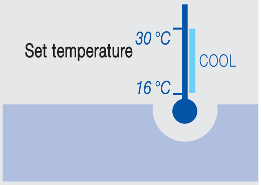
Select... MODE


COOL
27°C
AUTO
AUTO
12:50
AUTO FAN
TEMP

min. 16 °C
max. 30 °C

Choose the right temperature to be comfortably cool!

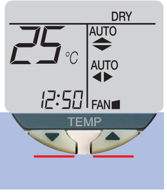
Recommended: **~26...28 °C**


Set temperature
30 °C
16 °C
COOL

DRY

Dehumidifying

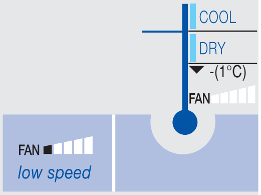
Select... MODE


DRY
25°C
AUTO
AUTO
12:50
FAN
TEMP

min. 16 °C
max. 30 °C

Very gentle cooling and dehumidifying operation.

Recommended: Room temperature **-(1~2)°C**

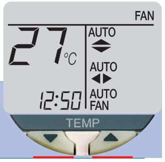

COOL
DRY
-(1°C)
FAN
FAN
low speed

automatic during dehumidifying

FAN

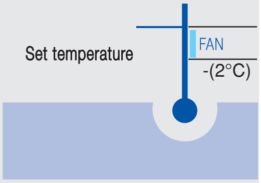
Air circulation

Select... MODE


FAN
27°C
AUTO
AUTO
12:50
AUTO FAN
TEMP

min. 16 °C
max. 30 °C

Fan operation, to circulate air in the room.


Set temperature
FAN
-(2°C)

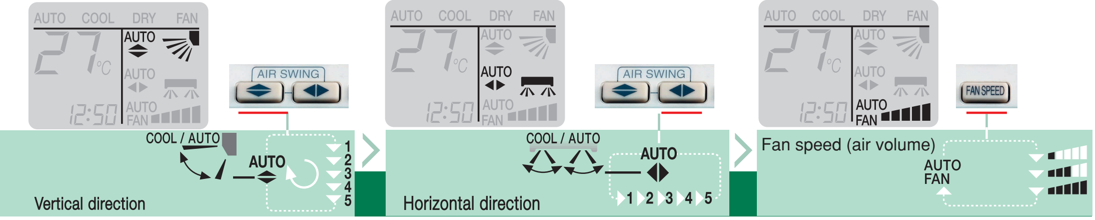
Switch off OFF/ON

STOP

Additional comfort

Press button

Air Flow


AUTO COOL DRY FAN
27 °C
AUTO
AUTO
AUTO FAN
12:50
AIR SWING
COOL / AUTO
AUTO
1 2 3 4 5
FAN SPEED
AUTO FAN

Vertical direction

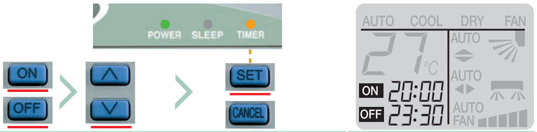
Horizontal direction

Fan speed (air volume)

Direction / volume

Adjust manually

TIMER Operation


POWER SLEEP TIMER
ON
OFF
SET
CANCEL
AUTO COOL DRY FAN
27 °C
ON 20:00
OFF 23:30
AUTO FAN

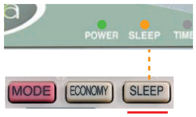
Function...	ON ON-Timer	OFF OFF-Timer	Select... Function	Time	Confirm/cancel	**ON/OFF Timers:** Active every day

Time OK? –> Setting: Page 28

Start before «ON» time

AUTO/COOL/DRY : 15 min.

SLEEP Operation


POWER SLEEP TIMER
MODE
ECONOMY
SLEEP

For a comfortable night temperature

ON OFF Activate

If TIMER + SLEEP set –> Priority TIMER

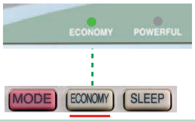
POWERFUL

ECONOMY POWERFUL
POWERFUL

Fast cooling

ON OFF Activate

ECONOMY

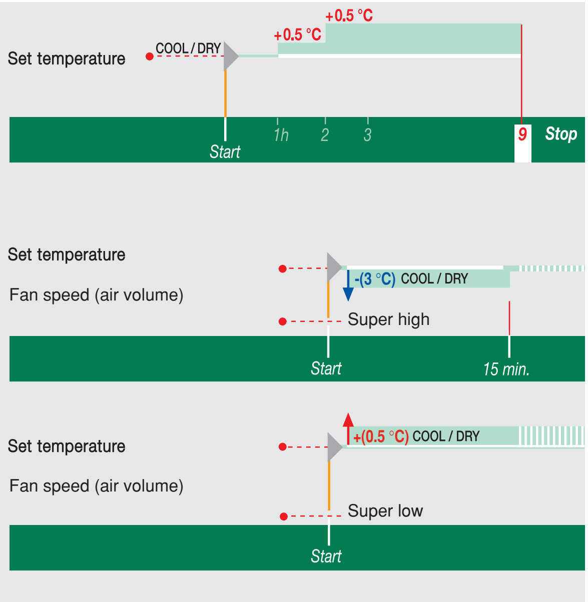

ECONOMY POWERFUL
MODE
ECONOMY
SLEEP

Save electricity!

ON OFF Activate

Use when desired room temp. is reached

Automatic Internal Function



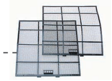
CARE & CLEANING

✓		✗	
Soaps	Household detergents	Benzine / Thinner	Scouring powder

Indoor Unit

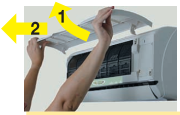
40°C max Wipe gently

Filters

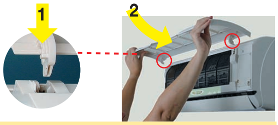


Filter cleaning see below

Front Panel

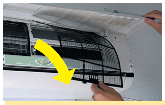


Remove ▶ 40°C max. Wash gently... ▶ + dry ▶

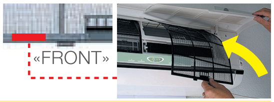


Air filters

every 2 weeks



Remove ▶ Vacuum ▶ 40°C max. Wash ▶ Dry ▶ Damaged -> replace! ? Part No. Ersatzteil Nr. CWD 001049 ▶ Reinstall



! DIRTY FILTERS cause: unpurified air, low cooling capacity, more unpleasant smells, higher energy consumption!

HELPFUL INFORMATION

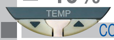
AUTO

If remote control malfunctions / is misplaced

▶ see page 25

Save cost

≃-10%



COOL +(1°C) | Close* | Vacuum*

* Better performance

Use... | ECONOMY! | SLEEP! | TIMER!

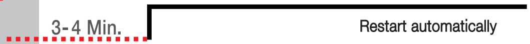
▶ see page 26

Thunder / Lightning

Built-in surge protection, BUT UNPLUG in case of very strong lightning!

Power Failure

When power resume...



Restart automatically

✓	MODE	Restored
✗	TIMER	Deleted ->set again!

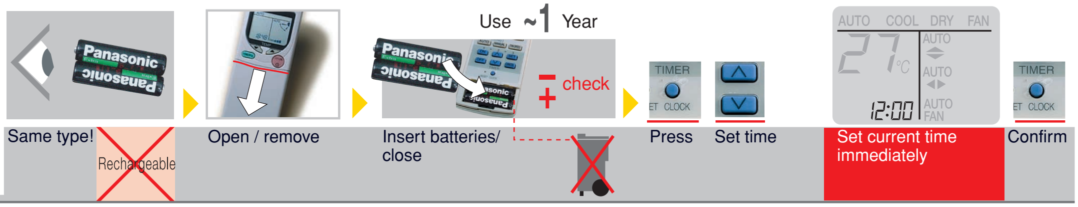
PREPARATIONS

Installation: see enclosed installation instruction!

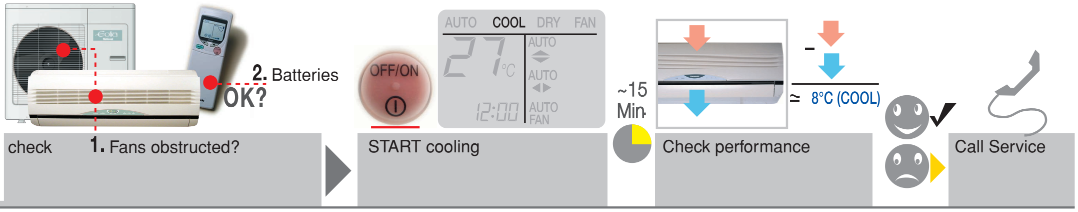
Press button

Plug / breaker

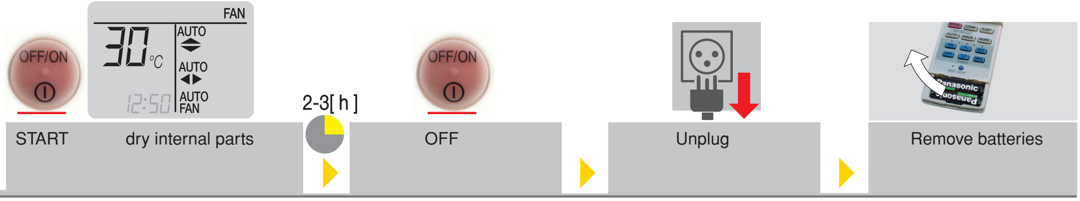
Insert batteries set clock


Panasonic
Same type!
Rechargeable
Open / remove
Use ~1 Year
Insert batteries/ close
check
TIMER
CLOCK
Press
Set time
AUTO COOL DRY FAN
27 °C
12:00
Set current time immediately
Confirm

Pre-season inspection


check
1. Fans obstructed?
2. Batteries
OK?
OFF/ON
START cooling
AUTO COOL DRY FAN
27 °C
12:00
~15 Min.
Check performance
≃ 8°C (COOL)
Call Service

For extended non-operation


OFF/ON
START
FAN
30 °C
AUTO
12:50
dry internal parts
2-3[h]
OFF
Unplug
Remove batteries

Recommended Inspections

After several seasons and due to operational conditions, performance may be reduced by dust or there may be unpleasant smells.

Consult an authorized distributor for inspection!

? TROUBLESHOOTING

✓ No problem

OK?

1	Operation delayed for 3 minutes after successful restart	Self protection procedure	✓
2	It sounds like water flowing...	Caused by refrigerant flow inside	✓
3	Mist seems to emerge from the indoor unit	Condensation effect due to cooling	✓
4	With setting «FAN AUTO» indoor fan sometimes stops	Smell elimination procedure	✓

! In case of...

- Abnormal noise during operation
- Water/foreign particles have entered the Remote Control
- Water leak from Indoor Unit
- Switches/buttons do not operate properly
- Circuit breaker switches off frequently
- Power plug/cord become unnaturally warm

TURN OFF / UNPLUG

CALL authorized distributor

1	No Operation	Circuit breaker tripped?	Power plug OK?	TIMER used correctly?
2	Remote control/display doesn't work	Batteries empty?	Batteries correctly inserted? See page 28	
3	Noise too loud	Installation work slanted?	Front grille/panel closed properly?	
4	Cooling efficiency low	Temperature set correctly?	Windows/doors closed?	Filters cleaned/replaced?
		Outdoor unit obstructed?	Intake/outlet ventilators obstructed?	

SAFETY PRECAUTIONS

Before operating, read the safety precautions thoroughly

EMERGENCY!

SOS Immediately isolate from the mains supply (e.g. if there is a smell of burning)

Use only for...

COOL Cooling

DRY Dehumidifying

FAN Air circulation

NEVER use this unit for purposes other than those listed in these Operating Instructions. In particular, do not use it for the preservation of food.

Installation

Never install, remove or reinstall yourself

Engage dealer/specialist

NOT in potentially explosive atmosphere

Connect drain hose properly

Mains connection

Engage dealer/specialist for mains connection including...

Used connectors/breakers easy reachable!

NEVER shared

! Connect protective earth!

Plug in properly

Australia (AS) Standard

The appliance is not intended for use by young children or infirm person without supervision. Young children should be supervised to ensure that they do not play with the appliance.

Operation

NEVER use the plug to switch on/off

Do NOT operate with wet hands

Do NOT stay long in the stream of cold air

Ventilate the room periodically

NEVER modify/damage mains cables/connectors

Do not pull out the plug by the cable

Place nothing on the unit -> covered openings may cause overheating/fire

NO fingers or objects into the unit! -> especially dangerous for children!

Unused for a long time? -> OFF/unplug

If the supply cord is damaged or needed to be replaced, it must be replaced by the manufacturer or its service agent or a similar qualified person in order to avoid a hazard

SAFETY PRECAUTIONS & FEATURES

Defects

Defect/suspicion of defect? –> Attend defects before use!

Do NOT repair yourself

Engage dealer/specialist

Cleaning

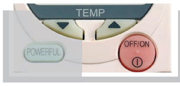
OFF and unplug (connector or breaker)

Do NOT wash!

Waste disposal

Uninstalling and disposal of the unit ONLY by dealer/specialist.
Contains CHLORO-FLUORO-CARBONS (CFC)

Packaging recyclable



	see page
Illuminating button: convenient in the dark!	
AUTO Automatic Operation: indoor temp. is gauged to select the optimum mode	25
Sleep Mode: for a pleasant night temperature	26
Economy Mode: reduce your electricity cost	26
Powerful Mode: reaches the desired room temperature quickly	26
Auto Restart Control: After power failure, restart automatically when power resume	27
Removable Front Panel: for quick and easy cleaning, washable	27

Indoor Unit ▣ Unit Luar ▪□

Operational Condition

[°C]	Wet Bulb min	Wet Bulb max	Dry Bulb min	Dry Bulb max
▣	11	23	16	32
▪□	11	26	16	43

Manufactured by:

MATSUSHITA INDUSTRIAL CORP. SDN.BHD.
Lot 2, Persiaran Tengku Ampuan, Section 21, Shah Alam
Industrial Site Selangor, Malaysia

MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.
web site: http://www.panasonic.co.jp/global/

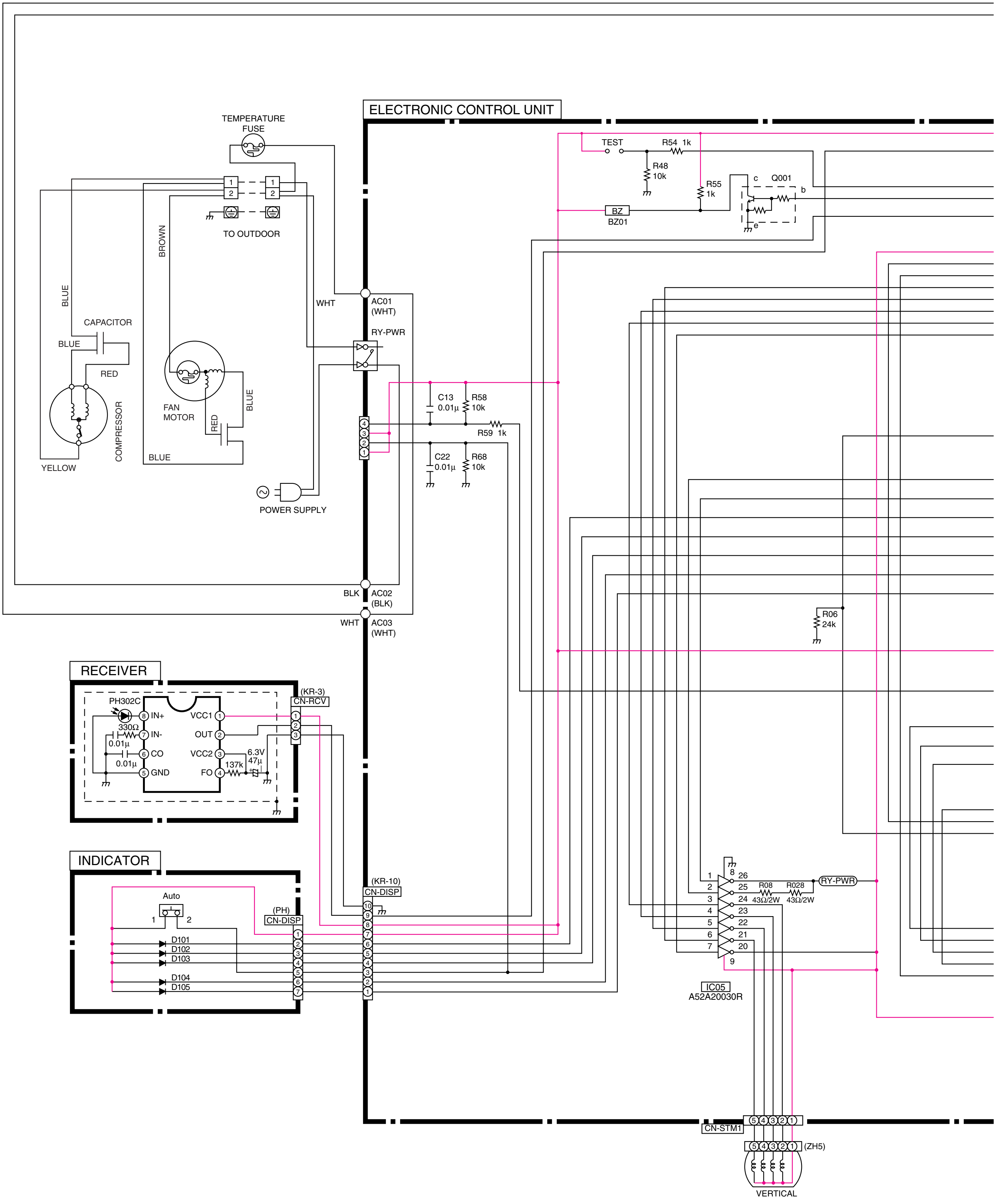
TSM SUCCESS MANUAL® - safe to use - easy to understand due to TSM® - Total Security Management and ergonomic communication® -***160103 by SEV-ASE***

TSM® TOTAL SECURITY MANAGEMENT

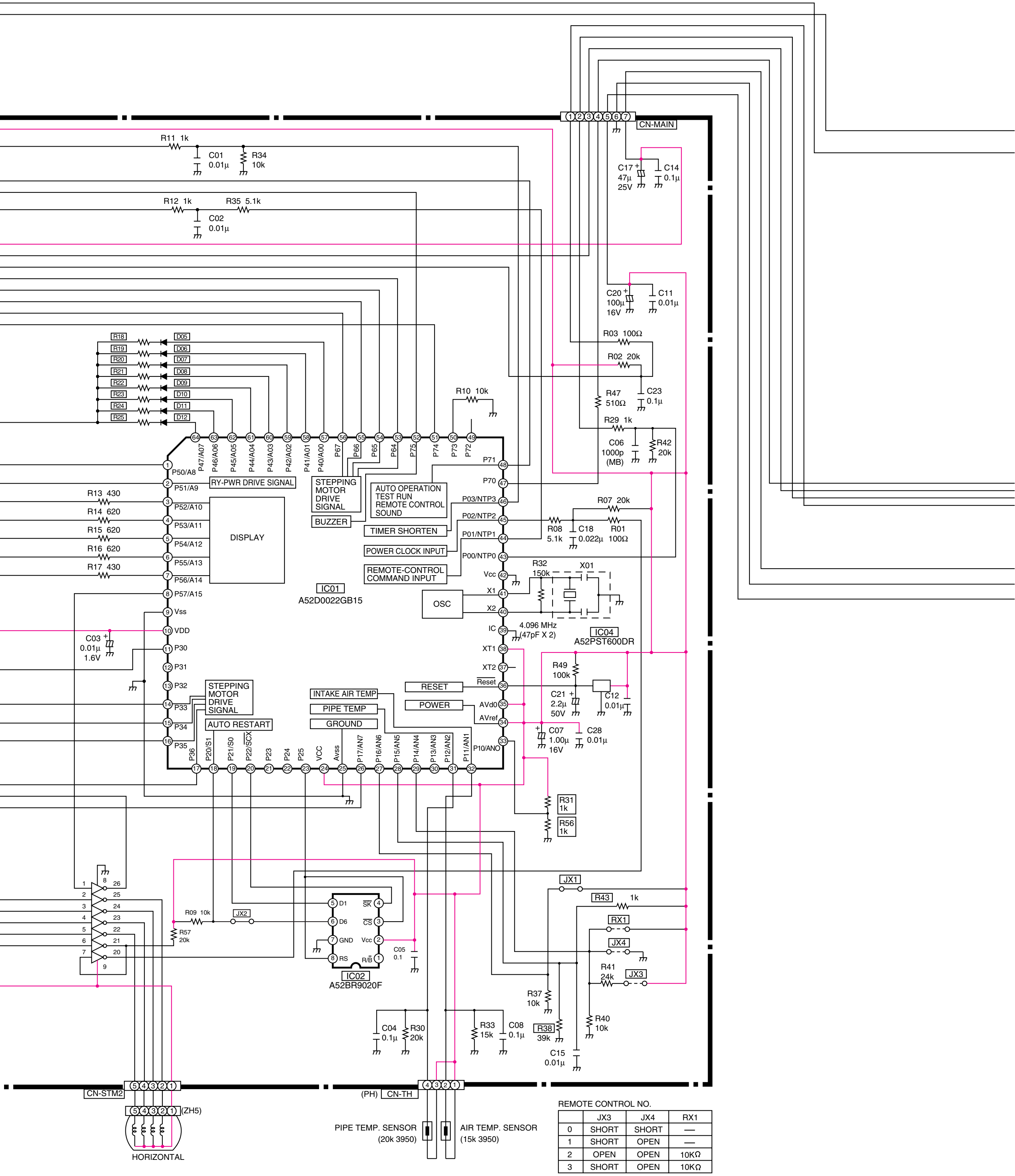
This TSM SUCCESS MANUAL® has been examined by SEV for conformity with the safety relevant standards, and has been analysed by an applicationoriented risk analysis for the completeness and correctness of the indications for a safe use of the appliance. Thereby we assume a use with which can be reckoned based on commonsense.

- **CS-E1819K / CU-E1819K**
- **CS-E2419K / CU-E2419K**

SCHEMATIC DIAGRAM 1/3


ELECTRONIC CONTROL UNIT
TEMPERATURE FUSE
TO OUTDOOR
BLUE
BROWN
CAPACITOR
BLUE
RED
YELLOW
COMPRESSOR
FAN MOTOR
RED
BLUE
BLUE
WHT
POWER SUPPLY
AC01 (WHT)
RY-PWR
BLK
AC02 (BLK)
WHT
AC03 (WHT)
TEST
R54 1k
R48 10k
R55 1k
BZ
BZ01
Q001
c
b
e
C13 0.01µ
R58 10k
R59 1k
C22 0.01µ
R68 10k
R06 24k
RECEIVER
PH302C
IN+
IN-
CO
GND
VCC1
OUT
VCC2
FO
330Ω
0.01µ
0.01µ
137k
6.3V 47µ
(KR-3)
CN-RCV
INDICATOR
Auto
D101
D102
D103
D104
D105
(PH)
CN-DISP
(KR-10)
CN-DISP
IC05
A52A20030R
R08 43Ω/2W
R028 43Ω/2W
RY-PWR
CN-STM1
(ZH5)
VERTICAL

SCHEMATIC DIAGRAM 2/3


CN-MAIN
1 2 3 4 5 6 7
C17 47µ 25V
C14 0.1µ
R11 1k
C01 0.01µ
R34 10k
R12 1k
R35 5.1k
C02 0.01µ
C20 100µ 16V
C11 0.01µ
R03 100Ω
R02 20k
R47 510Ω
C23 0.1µ
R29 1k
C06 1000p (MB)
R42 20k
R18 R19 R20 R21 R22 R23 R24 R25
D05 D06 D07 D08 D09 D10 D11 D12
R10 10k
P47/A07 P46/A06 P45/A05 P44/A04 P43/A03 P42/A02 P41/A01 P40/A00 P67 P66 P65 P64 P75 P74 P73 P72
P50/A8
P51/A9
P52/A10
P53/A11
P54/A12
P55/A13
P56/A14
P57/A15
Vss
VDD
P30
P31
P32
P33
P34
P35
RY-PWR DRIVE SIGNAL
DISPLAY
STEPPING MOTOR DRIVE SIGNAL
BUZZER
AUTO OPERATION TEST RUN REMOTE CONTROL SOUND
TIMER SHORTEN
POWER CLOCK INPUT
REMOTE-CONTROL COMMAND INPUT
P71
P70
P03/NTP3
P02/NTP2
P01/NTP1
P00/NTP0
Vcc
X1
X2
IC
XT1
XT2
Reset
AVd0
AVref
P10/ANO
R07 20k
R08 5.1k
C18 0.022µ
R01 100Ω
R32 150k
X01
4.096 MHz (47pF X 2)
OSC
IC01
A52D0022GB15
IC04
A52PST600DR
R13 430
R14 620
R15 620
R16 620
R17 430
C03 0.01µ 1.6V
R49 100k
C21 2.2µ 50V
C12 0.01µ
RESET
POWER
C07 1.00µ 16V
C28 0.01µ
STEPPING MOTOR DRIVE SIGNAL
AUTO RESTART
INTAKE AIR TEMP
PIPE TEMP
GROUND
P36 P20/S1 P21/S0 P22/SCX P23 P24 P25 VCC Avss P17/AN7 P16/AN6 P15/AN5 P14/AN4 P13/AN3 P12/AN2 P11/AN1
R31 1k
R56 1k
JX1
R43 1k
RX1
JX4
R41 24k
JX3
R37 10k
R38 39k
R40 10k
C15 0.01µ
R09 10k
JX2
R57 20k
D1 D6 GND RS SK CS Vcc R/B
IC02
A52BR9020F
C05 0.1
C04 0.1µ
R30 20k
R33 15k
C08 0.1µ
CN-STM2
(ZH5)
HORIZONTAL
(PH) CN-TH
PIPE TEMP. SENSOR (20k 3950)
AIR TEMP. SENSOR (15k 3950)

REMOTE CONTROL NO.

	JX3	JX4	RX1
0	SHORT	SHORT	—
1	SHORT	OPEN	—
2	OPEN	OPEN	10KΩ
3	SHORT	OPEN	10KΩ

SCHEMATIC DIAGRAM 3/3

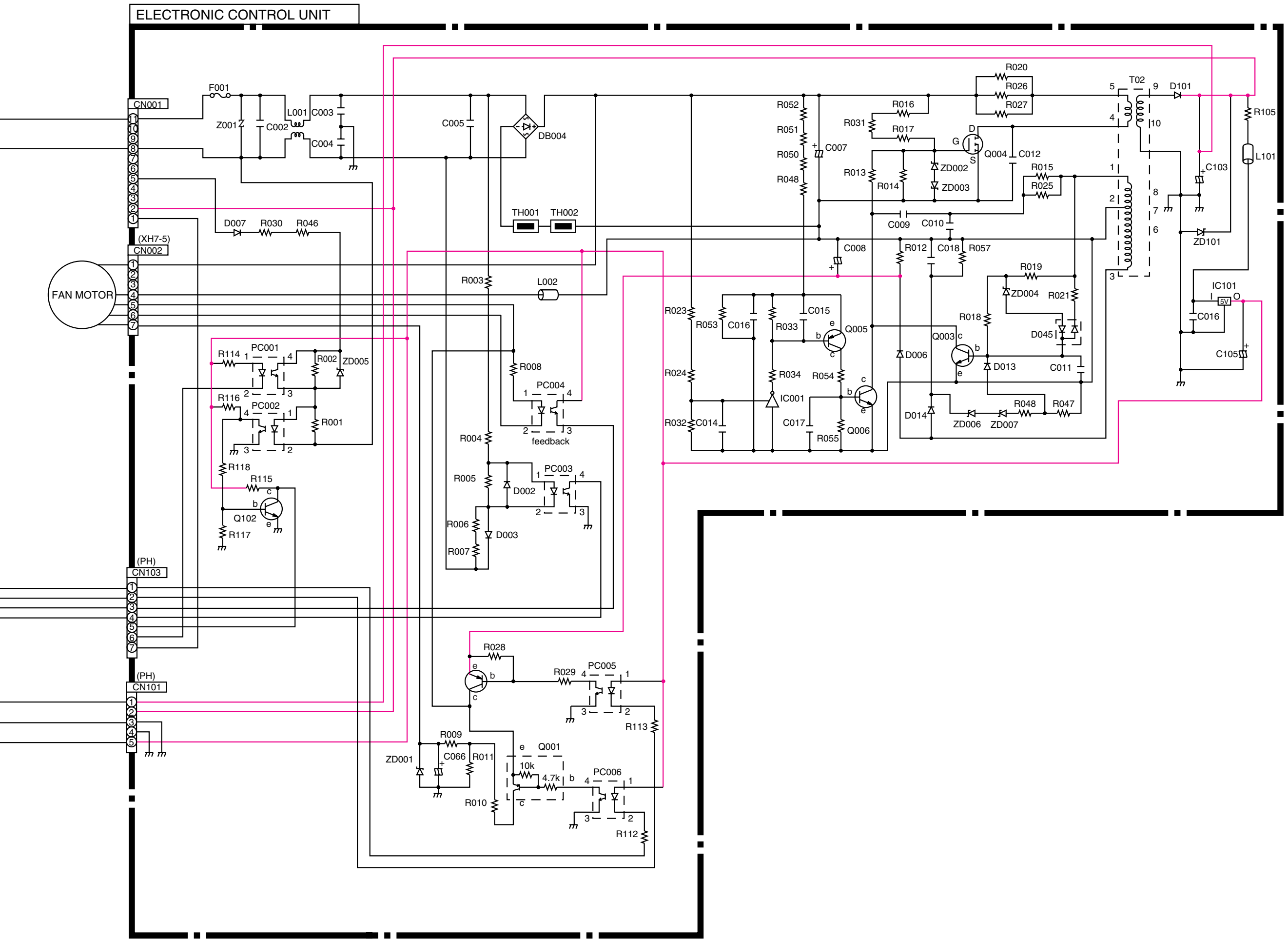

ELECTRONIC CONTROL UNIT
CN001
F001
Z001
C002
L001
C003
C004
C005
DB004
TH001
TH002
D007
R030
R046
(XH7-5)
CN002
FAN MOTOR
R003
L002
R008
PC004
feedback
R004
R005
D002
PC003
R006
D003
R007
R114
PC001
R002
ZD005
R116
PC002
R001
R118
R115
Q102
R117
(PH)
CN103
(PH)
CN101
R028
R029
PC005
R113
R009
ZD001
C066
R011
Q001
10k
4.7k
PC006
R010
R112
R052
R051
R050
R048
C007
R031
R016
R017
R013
R014
ZD002
ZD003
Q004
C012
R020
R026
R027
R015
R025
C009
C010
C008
R012
C018
R057
R019
ZD004
R021
R018
Q003
D045
D013
C011
R048
R047
D014
ZD006
ZD007
D006
R023
R053
C016
R033
C015
Q005
R024
R034
IC001
R054
Q006
R032
C014
C017
R055
T02
D101
R105
L101
C103
ZD101
IC101
5V
C016
C105

Fig. 1

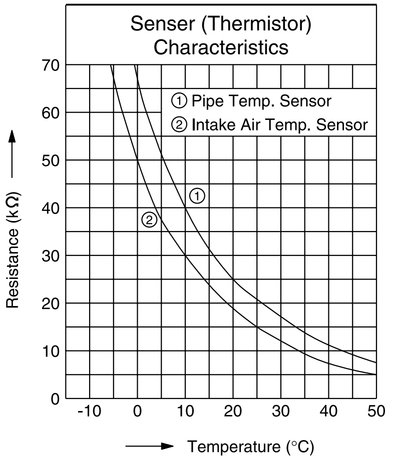


Fig. 2